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CATALOGUE

OF

PULMONATA

OR

AIR-BREATHING MOLLUSCA

IN

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THE COLLECTION

OF THE

BRITISH MUSEUM.

[by L. G. K. Pfeiffer]

PART I.

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PREFACE.

The principal object of the present Catalogue is to give a complete List of the Free Air-Breathing Mollusca (*Mollusca Pulmonata*), with descriptions of all the genera and species known to exist, indicating at the same time, by a B.M. in the margin, those contained in the British Museum.

The descriptions of the species of Shells belonging to these animals are by Dr. Louis Pfeiffer of Cassel, so well known for his attention to the Shells of Terrestrial Mollusca. The account of the animals and their arrangement has been brought up to the present state of the science.

JOHN EDWARD GRAY.

British Museum,
29 March, 1855.

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CATALOGUE

OF

PULMONATA.

Order V. PULMONATA.

Respiring free air in a closed chamber lined with pulmonic vessels, usually placed on the front of the back of the animal and covered by the shell, having an opening closed by a valve on the side. Animal hermaphrodite with reciprocal impregnation. The *larva* shell-bearing, shaped like the parent, and without any cephalic fins when first hatched: they are almost universally without any operculum. The teeth are numerous, similar, subequal, placed in many cross series on the lingual membrane.

Pulmonata (Les Pulmones), *Cuvier, Règ. Anim.* ii. 401, 1817.
Milne-Edw. Ann. Sci. Nat. 1848, ix. 112; *Wiegmann Arch.* 1849, 85.
Philippi, Handb. Conch. 235.
Latr. Fam. Nat. 1825.
Lovén, Moll. Suec.

Cœlopnoa seu Celopnoa, *Schweiger, Naturg.* 738, 1820.
Eichwald, Zool. Spec.

Pulmobranches, *Blainv. Bull. Soc. Philom.* 1814, 178; 1816, 122; *Organ. Anim.* i. t. 8, 1822.

Pulmobranchia, *Goldfuss, Handb. Zool.* 656, 1820.

Pulmonata inoperculata, *Férussac, Tab. Syst.* 31, 1821.
Rang, Man. 149, 1829.

Adelopneumona, *Gray, Lond. Med. Repos.* 1821.

Pneumonea, *Hartmann in Sturm Fauna*, vi. 33, 1821.
Pulmobranchiata, *Gray, Ann. Philos.* viii. 107, 1824.
Blainville, Dict. Sci. Nat. xliv. 98, 1826.
Deshayes, Ency. Méth. iii. t. , 1830.
D'Orbigny, Moll. Cuba, i. 139, 1841.
Reeve, Proc. Zool. Soc. 1841, 76.
Pulmonobranchiata, *Sow. Man.* 1842.
Pulmonibranchiata, *Agassiz, Index*, 1847.
Pulmonea, *Latr. Fam. Nat.* 1825.
Adelobranchia, *Risso, Eur. Mérid.* iv. 54, 1826.
Cœlopneumonata inoperculata, *Menke, Syn.* ed. 2.
Cœlopneumonata gymnostoma, *Menke, Syn.* 7, 1828.
Pulmonifera, *Guilding, Zool. Journ.* ii. 440, 1828.
Fleming, Brit. Anim. 225, 255, 273, 1828.
Pulmonacea, *C. Pfeiffer, Naturg. Moll.* iii. 1. 6, 1828.
Pulmonaria, *Griffith in Cuvier A. K.* xii. 26, 1834.
Colimacea, *Reeve, Conch. Syst.* ii. 64.
G. B. Sow. Manual, 1839, ed. 2. 112, 1842.
Pneumonica, *Verloren, Organ. Generat.* 1836.
Pneumobranchia inoperculata, *Gray.*
Pneumoneata, *Hartmann, Syst.* 1840.
Cœlopnoa gymnostoma, *Menke, Syn.* ed. 2. 13, 1830.
L. Pfeiffer.
Pneumobranchiata, *Gray, Turton's Man.* ed. 2. 77, 1840; *Syn. Brit. Mus.* 1840; 1842, 90.
Pneumobranchia, *Lamk. Hist. A. s. V.* vi. 292, 1819.
Gray, Syn. B.M. 1840.
Pneumobranchiata, *Gray, Proc. Zool. Soc.* 1847, 169, *in Mrs. Gray's Fig. Moll.* iv. 111, 1850.
Saccobranchia, *Leach, Brit. Moll.* 12, 44, 1852.

Synopsis of Families.

I. **GEOPHILA.** *Eyes at the apex of an elongated cylindrical peduncle. Tentacles cylindrical, shorter and lower down than the eye-peduncles, sometimes very small or wanting. Operculum none.* Terrestrial.

A. *Head, eye-peduncles and tentacles retractile under the skin.*

a. *Mantle covering the head. Tentacles in the front of the mantle.*

1. Janellidæ. Mantle covering the entire back. Tentacles two.

b. *Front of body, head and tentacles distinct from and retractile into the mantle.*

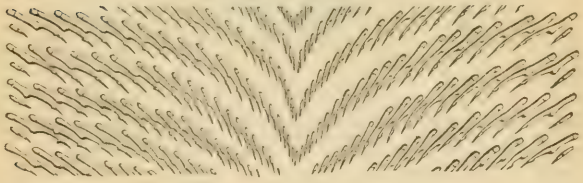
* *Young with an operculum, at length deciduous, and protected by an external shell which afterwards becomes hidden in the shield-like mantle of the adult.*

2. Cryptelladæ.

** *Young and adult without any operculum.*

3. Testacellidæ. Foot without any subcaudal gland. Teeth numerous, slender, conical, distant (fig. 1). Jaws none. Body and shell spiral, subcaudal.

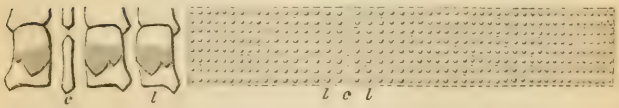
Fig. 1.—*Teeth of Testacellus.*



4. Arionidæ. Foot with a distinct gland rather above the tip. Teeth numerous, four-sided, close together on the lingual membrane. Jaw horny, distinct.

5. Helicidæ. Foot tapering behind, without any subcaudal gland. Teeth numerous, four-sided, close together on the lingual band (fig. 2). Jaw horny, distinct. Body and shell subcentral, dorsal.

Fig. 2.—*Teeth of Achatina fulica.*



In these figures, *c* represents the central, *l* the lateral, and *u* the exterior lateral teeth.

B. *Head, eye-peduncles and tentacles simply contractile.*

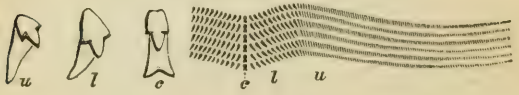
6. Veronicellidæ. Body elongate. Teeth numerous, four-sided, close on the lingual membrane.

7. Onchidiadæ. Body ovate. Teeth numerous, four-sided, close on the lingual membrane *.

II. **Limnophila.** *Eyes sessile. Tentacles two, subcylindrical or flattened, simply contractile. Operculum none.*

8. Auriculidæ. Eyes on the nape at the inner side of the base of the subcylindrical tentacles. Teeth like *Helicidæ* (fig. 3).

Fig. 3.—*Teeth of Auricula.*

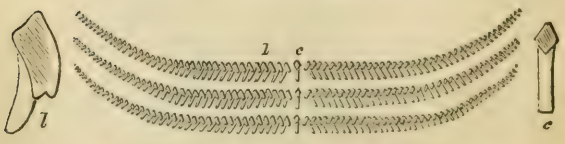


9. Lymneadæ. Eyes on the hinder side of the base of the flattened or filiform tentacles. Teeth like *Helicidæ*.

III. **Thalassophila.** *Eyes sessile, on the front part of the frontal disk formed by the expanded tentacles. Head produced. Lingual membrane very broad.*

10. Siphonariadæ. Shell conic. Operculum none. Teeth like *Helicidæ* (fig. 4).

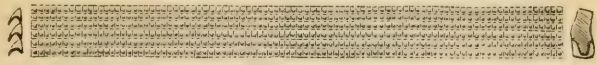
Fig. 4.—*Teeth of Siphonaria.*



* The teeth described as those of *Peronia Mauritiana*, in the *Ann. of Nat. Hist.*, Nov. 1853, were those of *Testacellus*. See *Ann. and Mag. N. H.* Jan. 1854.

11. AMPHIBOLIDÆ. Shell spiral. Mouth oblong. Operculum spiral, horny. Teeth like *Helicidæ* (fig. 5). Lingual membrane very broad.

Fig. 5.—*Teeth of Amphibola.*



I. **GEOPHILA.** *Eyes at the apex of an elongated cylindrical peduncle. Tentacles cylindrical, shorter and lower down than the eye-peduncles, sometimes very small or wanting. Operculum none, except* Cryptella? Terrestrial.

Geophila (Les Geophiles), *Férussac, Tab. Syst.* 3. 18, 1821.
Hartmann in Sturm Fauna, 33, 1821.
Gray, Mrs. Gray's Moll. iv. 111.
Geocochlides, *Latr. Fam. Nat.* 1825.
Geophilæ, *Menke, Syn.* 7, 1828.
Terricola, *Fleming, Brit. Anim.* 225, 1828.
Geochares, *De Crist. et Jans. Cat.* i. 1832.
Terrestrial Inoperculata, *Gray, Turton's Manual,* 101, 103, 1840.

A. *Head, eye-peduncles and tentacles retractile under the skin.*

a. *Mantle covering the head. Tentacles in the front of the mantle.*

Fam. 1. JANELLIDÆ.

Tentacles two, retractile, placed on the front edge of the mantle over the head. Body attached the whole length to the back of the foot, rather swollen on the hinder part of the middle of the back. Mantle thin, covering the whole of the back, and separated from the foot by a broad lateral groove, with three converging grooves in front above, the lateral one to the hinder side of the tentacles and forked beneath, the central medial, and extending along the centre of the back, giving off branches on each side, to the edge of the mantle. Aperture of respiration circular, small, on the front of the back on the right side of the central groove. Aperture of reproduction on the edge of the mantle on the right side, under the aperture of respiration. Foot narrow, in three bands, crenated on the edge.

Shell none.

1. JANELLA.

The only genus of the family.

Janella, *Gray, in Mrs. Gray's Figures of Mollusca*, iv. 112 ; *Ann. & Mag. N. H.* Dec. 1853.
Philippi, Handb. Conch. 237.
Limax, sp., *Quoy & Gaimard, Voy. Astrolabe.*

1. JANELLA ANTIPODARUM. B.M.

Body (in spirits) ovate lanceolate, back convex, dark brown.

Janella antipodarum, *Gray, Ann. & Mag. N. H.* Dec. 1853.

Hab. New Zealand. A single specimen.

Body elongate, convex ; back rounded ; tail not keeled, tapering, acute behind, without any subcaudal gland. Mantle covering the whole of the back, with a slightly raised lateral margin, leaving a rather broad space between it and the edge of the foot, thin, small, with a longitudinal groove along the centre of the back extending the whole length of the animal, and giving out branches from each side which diverge backward to the edge ; in front, over the head, there is given out a short, straight, diverging branch on each side to the hinder base of the tentacles, then forked, and the two branches continued on the under edge of the mantle to the corner of the mouth ; the tentacles two, arising from the front just within the edge of the mantle, and quite retractile like those of the Slugs. Aperture of respiration is a very small foramen, with a raised edge on the right side and close to the central groove on the back, just above the aperture of reproduction. Mouth inferior, at the end of the foot, with three tubercles in front, which are formed by the continuation of the grooves on the front of the mantle. Aperture for reproductive organs on the front part of the edge of the right side of the mantle, about one-fourth the entire length from the head.

The foot narrow, divided into three indistinctly-marked longitudinal bands, the middle band rather the widest, the lateral bands with rather distant cross grooves, most distinct on the outer edge and with shorter marginal grooves between them, giving the edge of the foot a crenated appearance ; the end of the body is suddenly more slender, with a prominence on the back just before this sudden alternation, as if the mass of the viscera were confined to the first two-thirds of the body ; but this may be caused by the contraction of the animal from being in spirits.

Shell none, or at least there is no appearance of any through the skin.

Length three-fourths of an inch.

2. JANELLA BITENTACULATA.

Depressed, yellowish, black spotted.

Limax bitentaculatus, *Quoy & Gaimard, Voy. Astrol.* t. . f. .
Janella (bitentaculatus), *Gray in Mrs. Gray's Fig. Moll.* iv. 112, 1850.
Mrs. Gray, Fig. Moll. t. 180. f. 15.
Philippi, Man. Conch. 239.

Hab. New Zealand, Tasman's Bay, on leaves.

"Head distinct, mouth oval; tentacles rather short, clubbed at the end; eyes very small, terminal. Back with a deep longitudinal groove extending the whole length, commencing from the head, divided rather to the left to surround the pulmonary aperture, which is placed on the back, and with oblique striæ diverging from each side of this groove. Foot scarcely distinct from the rest of the body, yellowish white; the back is dirty yellow, with pale brown spots. It has no appearance of any shield containing a horny shell."—*Quoy.*

May be the same as the former.

b. *Front of body, head and tentacles distinct from and retractile into the mantle.*

Fam. 2. CRYPTELLADÆ.

Animal when first hatched enclosed in a spiral shell, and furnished with an operculum which eventually falls off, and the shell is at length hidden in the substance of the mantle. Subcaudal gland ——? Teeth ——?

1. CRYPTELLA.

Body elongate, compressed, rather high, gibbous above. Head truncate; tail keeled, acute, short. Mantle shield-shaped, covering half the body, free in front; hinder part covering the front of the shell. Opening for respiration on the right side of the mantle, under the hinder part of the shell; anus rather in front of the mantle; orifice for generation behind the small tentacles. Foot slender.

Shell spathulate, oblong, depressed, transversely striated, rather thick, brittle; front part white, covered with the mantle; hinder exserted like a small boss, green, shining, with a hidden spire.

Cryptella (canariensis), *Webb & Berthelot, Ann. Sci. Nat.* 1833, xxviii., *in Gray, Proc. Zool. Soc.* 1847, 170. n. 442.
Guérin, Mag. Zool. t. 36.
Troschel, Wiegm. Arch. 1836, ii. 210.
Desh. in Lamk. Hist. vii. 712.
Cryptellus, *D'Orb. Moll. Cuba*, i. 237.
Parmacella (ambigua, sp.), *Férussac, Hist. Moll.*
Sow. Gen. Shells, xiii. t. 103.
Philippi, Handb. 240.
Testacella, sp. (ambiguus), *Férussac, Moll. Terr.* 9. 6. t. 8. f. 4.

1. CRYPTELLA AMBIGUA. B.M.

Nucleus of the shell very thick, solid, covered with a green polished periostraca, with only half a whorl exposed; the rest of the shell thick, white, covered with the mantle of the adult animal.

Testacellus ambiguus, *Férussac, Tab. Syst.* 27; *Hist. Moll.* ii. 95. t. 8. f. 4; t. 8 D. f. 9.
Parmacella calyculata, *Sow. Gen. Shells*, xiii. t. 103, 1823.
Parmacella ambigua, *Philippi, Handb.* 240.
Cryptella canariensis, *Webb & Berth. Ann. Sci. Nat.* 1833, xxviii.
Cryptella ambigua, *D'Orb. Hist. Nat. Canar.* 50. t. 1. f. 1–12.
Gray, Fig. Moll. iv. 113. t. 204. f. 1, t. 283. f. 5.

Hab. Canary Islands.

The *Cryptellæ* leave their egg covered with a shell furnished with an operculum. The animal when born is entirely contained in the young shell, on the edge of which is afterwards developed the second concretion. They are condemned to carry during the rest of their life the envelope that served them for a cradle, although in enlarging this part of the shell, they gradually fill up the cavity which formerly contained the body.

The operculum is said to be formed a little before the animal leaves its egg; it is horny, thin, encrusted on the surface, orbicular beneath, conical and swollen above, like that (an epiphragm) of *Helix naticoides*; its colour is dark brown; as the animal increases in size, it gradually leaves its shell; its tail first appears too large to enter the shell, but we have not been able to fix precisely the time when it throws off its operculum.

The animal commences to elongate externally, at the same time that the edge of the shell enlarges into the shape of a disk to cover the most important viscera, the protruding body augmenting by degrees under the mantle until the animal acquires the adult form.—*Webb & Berthelot*, 51.

Is it a true *operculum*? The authors compare it with the epiphragm of *Helix naticoides*.

Fam. 3. TESTACELLIDÆ.

Teeth numerous, conical, distant, in diverging cross series on a broad lingual membrane. Mouth proboscis-like. Jaws none. Shell spiral or subspiral, external, on the hinder part of the body. Operculum none.

Testacellidæ, *Gray*, *Ann. & Mag. N. H.* 1833.
Testacellina, *Gray*, *Proc. Zool. Soc.* 1847, 170.
Ancylidia, part., *Rafin. Anal. Nat.* 143, 1815.

Synopsis of Genera.

a. *Body subspiral; labial tentacles small.*

1. Testacellus. Shell ear-shaped.
2. Plectrophorus. Shell conical.

b. *Body spiral; labial tentacles elongate, contractile.*

3. Oleacina. Shell fusiform. Pillar smooth.

a. *Body subspiral; labial tentacles small.*

1. TESTACELLUS.

Shell small, ear-shaped, subspiral; mouth very large. Animal elongate, produced in front, with a groove on each side of the back. Mantle and shell on the hinder end of the back; mantle usually the same size as the shell (but capable of great extension so as to cover the rest of the body). Teeth pin-shaped, slightly curved, with a roundish head and acute tip, only attached by a small subcentral roundish process (see page 3, fig. 1).

Limaces à coquilles, *Favanne*, *Conch.* i. 429; *Zoom.* 76. f. A.
Testacelle (Testacella), *Cuvier*, *Leç. d'Anat. Comp.* i. t. 5, 1800; *Ann. Mus.* v. 435; *Mém. Moll.* xii.; *Règ. Anim.* ii. 403.
Lamk. Syst. A. s. V. 96.
Drap. Tabl. 99; *Hist.* 23, 30, 221.
Blainv. Man. Malac. 463.
Philippi, Handb. Conch. 240.
Testacellus, *Faure-Biguet*, *Bull. Soc. Phil.* n. 61, 1802.
Montf. Conch. Syst. ii. 94.
Férussac, Tab. Syst. ii. 26. 96*a*; *Hist. Moll.*
Menke, Syn. 1828, 13, 1830.

The *Testacellæ* have a peculiar mantle (or rather appendage of the mantle) which is simply gelatinous, contractile, and habitually hidden under the shell, divided into several lobes, and susceptible of an extraordinary development, so as to envelop the whole of the contracted body, and thus protect it from extreme drought.

They pass the greater part of their life in holes under ground, only coming to the surface to change their locality, and remain buried one or two feet deep in the earth during the cold and very dry weather. They deposit their eggs under ground; they are oblong, large, and covered with a thick elastic coat, and burst when moved into a warm place. When the animal deposits its eggs, the head and tentacles are drawn in so that the opening of the oviduct is the end of the body. They live chiefly on worms, but sometimes attack slugs and small specimens of their own species, shells of their own kind being found in their stomach.

Rafinesque names, but does not describe, *Testacina*, *Urcinella* and *Zilotea*.—*Anal. Nat.* 1815.

1. TESTACELLUS HALIOTIDEUS. B.M.

Yellowish red or grey, spotted or spotless. Tentacles cylindric. Shell ovate, pointed behind, horn-coloured, thick, rugose externally, shining within. Spire white, broad and flat.

Limax, *Favanne*, *Conch. Zoom.* t. 76. f. A 1, A 2.
Testacelle ormier, *Faure-Biguet*, *Bull. de Sci.* iii. n. 61. 38. t. 5. f. 2. A, B, C, D.
Testacelle, *Cuvier*, *Ann. Mus.* v. 435. t. 29. f. 6, 7, 11; *Mém. Moll.* xii. t. 1. f. 6, 7, 11.
Testacella europæa, *De Roissy*, *Sonnini*, *Buff. Moll.* v. 252.
Testacellus europæus, *Montf. Conch. Syst.* ii. 93, 96.
Testacella haliotidea, *Drap. Tabl.* 99; *Hist.* 121. t. 8. f. 43, 48; t. 9. f. 12, 14.
Lamk. E. M. t. 463. f. 4, cop. *Drap.*
Blainv. Man. Malac. 463. t. 41. f. 2.
Testacella galliæ, *Oken*, *Lehrb. Naturg.* i. 311. t. 9. f. 8.
Testacellus haliotideus, *Férussac*, *Tab. Syst.* 26; *Moll.* ii. 94. t. 8. f. 5–9.
Moquin-Tandon, *Journ. de Conch.* ii. 125.

Var. 1. Pale yellow, not spotted.—*Férussac*, f. 5, 6.
Var. 2.? Testacella, *Férussac*, *Hist. Moll.* ii. t. 8 F. f. 24, 25.
Gray, *Fig. Moll.* t. 286. f. 5.
Var. 3. Testacellus bisulcatus, *Risso*, *Hist. Eur. Mérid.* 1826, iv. 58.
Testacella bisulcata, *Dupuy*, *Moll. France*, 45. t. 1. f. 2.

Var. 4. Testacellus Haliotidea, var., *Aleron in Guide Voyage in Roussillon*, 1847, p. 327.

Testacella companyonii, *Dupuy, Moll. France*, i. 47. t. 1. f. 3.

Hab. South of Europe, South of France and Spain: introduced into England.

2. Testacellus Maugei. B.M.

Reddish brown, spotted; edge of foot orange. Tentacles filiform. Shell ovate elongate, thin, finely striated; spire elevated, distinct.

Testacellus haliotoideus, *Lamk. Syst.* i. 96.
Bosc, N. Dict. H. N. xxii. 80.
Buffon, Deterville, iii. 239.
Roissy, Buffon, Sonnini, v. 253.
Ledru, Voy. Teneriffe, i. 187.

Testacellus Maugei, *Férussac, Tab. Syst.* 27; *H. Moll.* ii. 94.

Hab. Teneriffe; introduced into England in gardens.

2. PLECTROPHORUS.

Shell very small, subconic, subspiral, on hinder part of the body; mouth round, with a slight fold on the back edge. Animal produced in front with a granulated disk (enlarged mantle?), produced before and slightly behind the shell, and with a similar broader granular shield (true mantle?) in front of the back; with the aperture of respiration in the middle of the right side of the front disk, as in the shield-like mantle of *Limax* and *Arion*. Teeth ——?

Limaces à coquilles, *Favanne, Conch. Zoom.* t. 76.

Testacelle, sp., *Cuvier, Leç. d'Anat. Comp.* i. t. 7.
Lamk. Syst. A. s. V. 96.

Plectrophorus, *Férussac, Tab. Syst.* 10. 25. 96⁰, 1819; *Hist. Moll.* ii. 84; not *Bosc.*
Gray, Lond. Med. Repos. 1821; *Proc. Z. S.* 1847, 170. n. 439.
Philippi, Handb. Conch. 241.

Plectophorus, *Gray, Syn. B.M.* 1842, 68, misprint.

This genus is only known from a single species observed by the elder D'Orbigny in Teneriffe, and figured by Férussac from his details, and from figures in the old work of Favanne, an author whose figures often require correction. It is so unlike the usual form of terrestrial Mollusca, especially in having the shell placed at a distance from the aperture of respiration, that we cannot but believe there has been some inaccuracy in the description which wants verification. There is reason to believe that one

figure which has been named *P. corninus*, only represents an *Arion ater* with some hardened mucus on its subcaudal gland, which has been mistaken for a shell! This species differs from the others in wanting the posterior shield bearing the shell.

1. PLECTROPHORUS D'ORBIGNII.

Shell conical, acute; mouth oval, very concave internally; left lip thick, right lip sharp-edged.

Testacelle de Teneriffe, *D'Orbigny*, *MSS.*
Plectrophorus Orbignii, *Férussac*, *Tab. Syst.* 26; *Moll.* ii. 87. t. 6. f. 7.
Hab. Teneriffe (*D'Orbigny*).

2. PLECTROPHORUS COSTATUS.

Cochlea testacea terrestris, *Favanne*, *Conch. Zoomorph.* t. 76. f. C 1, C 2.
Testacella costata, *Bosc*, *Buffon*, *Deterv. Coq.* iii. 240. *Roissy*, *Buffon*, *Sonnini Moll.* v. 254.
Plectrophorus costatus, *Férussac*, *Tab. Syst.* 26; *Hist. Moll.* ii. 86. t. 6. f. 6, cop. from *Favanne*.
Hab. Maldives.

Only known from a drawing and description sent by M. Solendrac de Pilmont, "an English (?) traveller," to Favanne.

3. PLECTROPHORUS? CORNINUS.

Side of foot pale black-banded.

Limax, *Favanne*, *Conch.* i. 429; *Zoom.* t. 76. f. B 1, B 2.
Testacella cornina, *Bosc*, *Buffon*, *Deterv. Coq.* iii. 239. *Roissy*, *Buffon Moll.* v. 253.
Plectrophorus corninus, *Férussac*, *Tab. Syst.* 26; *Hist. Moll.* ii. 86. t. 6. f. 5, from *Favanne*.
Hab. ——?

A very doubtful species: see note to the genus.

b. *Body spiral: labial tentacles elongate, contractile.*

3. OLEACINA.

Shell oblong, acuminate, more or less fusiform; whorls six to eight, last much the largest. Pillar arcuately truncated. Mouth narrow elliptical, oblong or oval. Peristome simple, straight; of outer lip sinuate. Foot elongate; head produced; mouth proboscidiform. Labial tentacles triangular, slender, elongate, very dilatile, produced on the sides; upper tentacles elongate, swollen

at the ends above the eyes. Aperture of reproduction on the right side rather behind the right tentacles: no dart nor vesicula multifida. Teeth small, conical, in arched cross series.

Carnivorous, eating mollusca.

Oleacina, *Bolten Mus.* (1798); ed. 2. 1819, 77.
Gray, Proc. Zool. Soc. 1847, 178. n. 485.
Polyphemus, *Mont. Conch. Syst.* 1810.
Say, Amer. Conch.
Glandina, *Schum. Essai Syst.* 202, 1817.
Albers, Heliceen, 197.
Cochlicopa *a*, *Férussac, Tab. Syst.* 1821.
Cochlycopa, *Swainson, Malac.* 1840.
Halia, *Risso, Eur. Mérid.* iv. 1826, not *Macgill.*
Gray, Proc. Zool. Soc. 1847, 178. n. 486.
Priamus, *Beck, Index.*
Ferussacia, *Risso, Eur. Mérid.* iv. 81, 1826.
Vediantius, *Risso, Eur. Mérid.* iv. 81, 1826.
Cionella, *Albers, Heliceen*, 199.

Say described the animal; Dr. Wyman, in the *Boston Journ. Nat. Hist.* iv. 416, and in the *Terrestrial Air-breathing Mollusks of the United States*, gives the anatomy of the *Oleacina truncata*, the North American species; Morelet described the animal of *Glandina carminensis* (*Journ. Conch.* ii. 1851, 27. t. 1), and Dr. Louis Raymond the anatomy of the Algerian species, *O. Algira* (*Journ. Conch.* 1853, 14. t. 1), showing the uniform structure of these species. Dr. Raymond observes, the tongue is very similar to that of *Testacellus*, rough, with small inclined spines. These spines are acute, resistent, and adherent by a moderately sized base. He considers "*Testacella* as a *Glandina* with a rudimentary shell."

"The teeth, on the surface of the tongue, are sharp pointed, elongated and somewhat recurved, arranged in lines 'en chevron,' the apex being directed backwards. There are no teeth on the median line, corresponding to the axis of the tongue; and in this respect it differs from many of the *Pulmoniferous Gasteropoda*, in which a range of median symmetrical teeth is generally found to exist."—*Wyman, Bost. Journ.* iv. 416. pl. 23. f. 1.

a. *Pillar lip distinctly truncate.*

* *Country unknown.*

1. Oleacina Priamus. B.M.

Shell ovate, ventricose, thin, smooth, diaphanous, fulvous-rosy, ornamented with distant, square, chestnut-red dots, dis-

posed in transverse lines; spire short; lip sharp. Lon. 68, lat. 34; ap. lon. 48, lat. 25 mill.

Helix Priamus, *Menschen in Cat. Mus. Gron.* n. 1355.
Gronovii Zoophyl. fasc. 3. t. 2. f. 10, 11 (Cochlicopa).
Fér. Pr. 355; *Hist.* t. 135. f. 5.
Helix Priapus, *Gmel.* 3654. n. 198.
Buccinum ficus, *Martyn, Univ. Conch. ed. Chenu* (*Bibl. Conch.* ii.), 25. t. 28. f. 3.
Buccinum stercus pulicum, *Chemn.* ix. pt. 2. 35. t. 120. f. 1026, 1027.
Bulla stercus pulicum, *Gmel.* 3434. n. 45.
Bulla Priamus, *Dillw. Descr. Cat.* i. 493. n. 51.
Bulimus Priamus, *Brug. in Enc. Méth.* i. 360. n. 104.
Achatina Priamus, *Lam.* xii. p. 131; *ed. Desh.* 299.
Küster, t. 3. f. 7, 8.
Pfr. Mon. Helic. ii. 279.
Achatina maculata, *Swains. Exot. Conch.* t. 23.
Priamus stercus pulicum, *Beck* (teste *Desh.* 300).
Priamus, *Sow. Conch. Man.* ed. 2. f. 545.
Halia stercus pulicum, *Herrm. Ind. Gen. Mal.* i. 495.

Hab. ——? "Spain" (*Martyn*). "Coast of Guinea?" (*Fér.*)

Dr. Beck and some other authors have considered this as a marine species, but hardly on sufficient evidence. Many terrestrial shells are washed down by the rivers into the sea, and are often found on the coast with zoophytes parasitic on them; they have, for this reason, formed it into a genus, under the names of *Halia* and *Priamus*.

** *American.*

2. Oleacina voluta. B.M.

Shell oblong, subfusiform, rather solid, smooth, reddish under the greenish-horny epidermis; spire short, conic, rather obtuse; whorls seven or eight, flattened, the last nearly equalling two-thirds the length, attenuated downwards; suture linear, white-margined; columella strongly arched, abruptly truncated at the base of the narrow, pointed-oblong aperture; peristome sharp. Lon. 51, lat. 19; ap. lon. 30, lat. 9 mill.

Bulla voluta, *Chemn.* ix. pt. 2. 16. t. 117. f. 1009, 1010.
Dillw. Descr. Cat. i. 486. n. 34.
Bulimus glans, *Brug. Enc. Méth.* i. 365. n. 111.
Helix glans (Cochlicopa), *Fér. Pr.* 362.
Achatina glans, *Lam.* xiii. 132, *ed. Desh.* 300.
Blainv. Malac. t. 40. f. 2?
Küster, t. 7. f. 4, 5.

Achatina voluta, *Pfr. Mon. Helic.* ii. 279.
Reeve, Conch. Icon. n. 55. t. 14.
Desh. in Fér. ii. 177. n. 40. t. 124. f. 5, 6.
Oleacina volutata, *Bolt.* 110. n. 1411.
Polyphemus glans, *Montf.* ii. 415. t. 104.
Villa, Disp. Syst. 19.
Sow. Conch. Man. f. 288 (err. 298).
Glandina olivacea, *Schumacher*, 202.
Glandina glans, *Beck, Index*, 78. n. 10.
Glandina voluta, *Pfr. Symb.* ii. 136.
Morelet, l. c. 37.
Alb. 197.
Cochlycopa glans, *Swains. Malac.* 335.
Hab. Antilles.

3. Oleacina leucozonias. B.M.

Shell subfusiform-oblong, very finely striated longitudinally, chestnut, irregularly striped with remote, wavy, white lines; whorls eight, slightly convex, the last equalling the spire, angular; anterior lips whitish, prominent; columella slightly arched, ribbed, obliquely truncated; aperture irregularly oblong, narrow; peristome simple, white, dextral margin angularly dilated towards the base. Lon. 46, lat. 17; ap. lon. 24, lat. 8 mill.

Martini, iv. 220. t. 148. f. 1371, 1372.
Voluta leucozonias, *Walch in Naturforscher*, iv. 110. t. 1. f. 3, 4.
Gmel. 3453. n. 56.
Dillw. Descr. Cat. i. 547. n. 110.
Helix leucozonias (Cochlicopa), *Fér. Pr.* 363.
Achatina albolineata, *Lam.* xv. 132, *ed. Desh.* 301.
Crouch, 19. t. 15. f. 5 *a*.
Küster, t. 14. f. 7, 8.
Achatina leucozonias, *Sow. Gen. Shells*, n. 14.
Reeve, Conch. Syst. ii. t. 176. f. 3; *Conch. Icon.* t. 14. f. 52.
Pfr. Mon. Helic. ii. 280. n. 103; *Ic.* n. 15. *Bul.* t. 24. f. 11.
Desh. l. c. 178. n. 41. t. 123. f. 13, 14.
Polyphemus leucozonias, *Jan. Cat.* 4.
Glandina leucozonias, *Beck, Index*, 78. n. 7.
Morelet, l. c. 38.
Hab. Martinique.

4. Oleacina straminea.

Shell oblong, somewhat fusiform, thin, fragile, very polished, straw-yellow, pellucid; spire elongate, convexly conic; apex

rather pointed; whorls five, moderately convex, the penultimate ones rather broad, the last ovate, a little longer than the spire; aperture elongate, narrow, attenuated posteriorly, dilated anteriorly; columella short, concave, acuminated above, twisted; peristome sharp, contracted in the middle, dilated forwards. Length 37, breadth 13 mill. (*Desh.*)

Achatina straminea, *Desh. in Fér. Hist.* ii. 172. n. 34. t. 123. f. 11, 12.
Pfr. Mon. Suppl. 507.

Locality unknown.

5. Oleacina attenuata.

Shell oblong-fusiform, slender, thin, smooth, very shining, fulvous, marked with darker arcuate streaks; spire elongate, conic; apex rather blunt; suture slight, rather simple; whorls seven, rather flat, the last forming about three-fifths of the total length, attenuated in front; columella somewhat callous, slightly arched and twisted, obliquely truncated at its base; aperture very narrow, oblong, acute above, dilated towards the left side near the base; peristome simple; right margin sinuate. Length 31, breadth 11 mill. (*Pfr.*)

Achatina attenuata, *Pfr. in Proc. Zool. Soc.* 1851, p. ; *Ic.* n. 43. *Bul.* t. 26. f. 10, 11; *Mon. Suppl.* 507.

Hab. Central America.

6. Oleacina oleacea. B.M.

Shell subfusiform-oblong, thin, smooth, very shining, greenish-horny, pellucid; spire conic, apex rather acute; suture somewhat margined; whorls seven to eight, slightly convex, the last a little exceeding the spire, somewhat attenuated at the base; columella short, arched, obliquely truncated above the base of the pointed-oblong aperture, dilated towards the base; peristome sharp, dextral margin dilated midway in front. Lon. 29, lat. 10; ap. lon. 15½, lat. 5 mill.

Helix oleacea (Cochlicopa), *Fér. Pr.* 360 *et Mus.*!
Achatina oleacea, *Desh. in Enc. Méth.* ii. 11. n. 6; *in Guér. Mag.* 1831, t. 3; *l. c.* 172. n. 33. t. 123. f. 5, 6.
Lam. ed. Desh. xxiii. 307.
Orb. Moll. Cub. i. 165. t. 10. f. 15, 16.
Pfr. Mon. Helic. ii. 280; *Ic.* n. 79. *Bul.* t. 38. f. 3, 4.
Reeve, Conch. Icon. t. 14. f. 51.
Achatina fulgens, *Mus. Berol.* olim.
Polyphemus oleaceus, *Pfr. in Wiegm. Arch.* 1839, i. 352.

Glandina oleacea, *Beck, Index*, 78. n. 9.
Pfr. Symb. ii. 136.
Phil. Icon. i. 6. 131. t. 1. f. 1.
Morelet, l. c. 37.
Alb. 197.

Hab. Cuba.

7. Oleacina glabra,

Shell ovate-conic, thin, glabrous, shining, pale horny, ornamented with narrow, distant, rufous stripes, vanishing at the middle of the last whorl; spire conic, apex obtuse; suture very finely crenulate-margined; whorls eight, flattened, the last scarcely exceeding the spire; columella very oblique, strongly arched, truncated at the base of the subtriangular aperture; peristome simple, dextral margin regular. Lon. 28, lat. 11; ap. lon. 14, lat. 5 mill.

Achatina glabra, *Pfr. Mon. Helic.* ii. 281; *Ic.* n. 113. *Bull.* t. 67. f. 1, 2.
Reeve, Conch. Icon. t. 14. f. 58.
Glandina glabra, *Pfr. Symb.* iii. 90.
Morelet, l. c. 37.

Hab. Porto Rico.

8. Oleacina assimilis.

Shell ovate-oblong, rather solid, smooth, pellucid, very shining, reddish horn-coloured; spire convexly conic, rather blunt; suture bordered; whorls five and a half, scarcely convex, the last about as long as the spire, slightly attenuated in front; columella slightly twisted, obliquely truncated; aperture perpendicular, narrow, rhomboidally-semiovate; peristome simple, blunt, with the right margin slightly sinuate. Length 20, breadth 9 mill. (*Pfr.*)

Achatina assimilis, *Reeve, Conch. Icon.* n. 67. t. 15.
Pfr. Mon. Suppl. 508.

Locality unknown.

9. Oleacina obtusa.

Shell ovate, attenuated each way, apex obtuse, smooth, rather solid, pellucid, flesh-coloured; suture margined, obsoletely crenulate; whorls five and a half, very slightly convex, the last a little exceeding the spire; columella nearly vertical, abruptly truncated; aperture rather wide; peristome simple, margins united by a very thin callus, dextral scarcely dilated in the middle. Lon. 26, lat. 11; ap. lon. 12½, lat. 5½ mill.

Achatina obtusa (Glandina), *Pfr. in Phil. Icon.* i. 6. 132. t. 1. f. 3; *Mon. Helic.* ii. 281; *Ic.* n. 80. *Bul.* t. 38. f. 5, 6.
Reeve, Conch. Icon. t. 15. f. 62.
Desh. l. c. 173. n. 35. t. 134. f. 3, 4.
Glandina obtusa, *Pfr. in Proc. Zool. Soc.* 1845, p. 42.
Alb. 197.
Morelet, l. c. 37.

Hab. Real Llejos, Province of Nicaragua, Central America.

10. Oleacina Lindoni. B.M.

Shell oblong, attenuated each way, rather solid, smooth, shining, pale fulvous, marked with darker, slightly prominent, arched lines of growth; spire conic, rather acute; suture slightly margined; whorls eight, nearly level, the two last descending obliquely, the last equalling the spire, gibbous within, on the columella; columella short, obliquely truncated at the base of the aperture; aperture very narrow, somewhat channelled at the base; peristome simple, margins united by a callus, the dextral arched dilated in front. Lon. 21, lat. 6; ap. lon. 10½, lat. 2 mill.

Achatina Lindoni (Glandina), *Pfr. in Proc. Zool. Soc.* 1846, p. 116; *Mon. Helic.* ii. 281.
Reeve, Conch. Icon. t. 25. f. 88.
Desh. l. c. 174. n. 36. t. 134. f. 5–7.
Glandina Lindoni, *Morelet, Journ. Conch.* 1852, p. 37.
Glandina onychina, *Morelet, Test. Noviss.* i. 14. n. 25.
Achatina onychina, *Pfr. Mon. Suppl.* 508, 657.

Hab. Cuba.

11. Oleacina delibuta.

Shell cylindrical, thin, very faintly striated, shining, semidiaphanous, horn-coloured-greenish; spire conoidal, short, with the apex rather blunt; suture scarcely impressed, bordered; whorls seven, rather flat, the last longer than the spire; columella callous, twisted, slightly truncated exteriorly; aperture narrow, dilated in front, pearly within; peristome simple, with the outer margin dilated in the middle. Length 23, breadth 10 mill. (*Mor.*)

Glandina delibuta, *Morelet, Test. Noviss.* ii. 13. n. 108; *Journ. Conch.* 1852, 40.
Achatina delibuta, *Pfr. Mon. Suppl.* 508.

Hab. Province of Vera Paz, Guatemala.

12. Oleacina labida.

Shell ovate-conic, rather solid, very faintly striated, semitransparent, horn-yellow, marked on the last whorl with several pale greenish streaks; spire conic, short; suture scarcely impressed, bordered; whorls seven, little convex, the last equalling half the total length; columella callous, twisted, scarcely truncated; aperture narrow, semiovate. Length 22, breadth 10½ mill. (*Mor.*)

Glandina labida, *Morelet, Test. Noviss.* ii. 13. n. 107.
Achatina labida, *Pfr. Mon. Suppl.* 508.

Hab. Vera Paz, Guatemala.

13. Oleacina Riisei.

Shell turreted-oblong, rather solid, smooth, marked with distant impressed longitudinal lines, shining, irregularly painted with rather broad fuscous streaks; spire elongate, rather blunt; suture nearly simple; whorls seven, scarcely convex, the last forming not quite two-fifths of the total length, somewhat attenuated in front; columella slightly arched, abruptly truncated above the base of the aperture, which is almost perpendicular, sinuately semiovate; peristome simple, straight, right margin slightly sinuate. Length 20, breadth 7 mill. (*Pfr.*)

Achatina Riisei, *Pfr. in Z. f. M.* 1852, p. 151; *Ic.* n. 114. *Bul.* t. 67. f. 3, 4; *Mon. Suppl.* 509.

Hab. Porto Rico (*Riise*).

14. Oleacina solidula.

Shell subfusiform-oblong, rather solid, bright fulvous, subpellucid; spire conic, rather obtuse; suture submarginate; whorls six, scarcely convex, the last less than five-ninths the length; columella strongly and obliquely truncated; aperture narrow, lengthened acuminate; peristome simple, obtuse, dextral margin arched midway in front. Lon. 13, lat. 4½; ap. lon. 6⅔, lat. 2 mill.

Polyphemus solidulus, *Pfr. in Wiegm. Arch.* 1840, i. 252.
Glandina solidula, *Pfr. Symb.* ii. 136; *Ic.* n. 82. *Bul.* t. 38. f. 8–11.
Reeve, n. 92. t. 18.
Desh. l. c. 174. n. 37. t. 134. f. 8–11.
Phil. Icon. i. 6. 131. t. 1. f. 6.
Alb. 198.
Achatina solidula, *Pfr. Mon. Helic.* ii. 282.
Reeve, Conch. Icon. t. 18. f. 92.
Var. Glandina paragramma, *Morelet, Test. Noviss.* i. 15. n. 31

Hab. Cuba.

15. Oleacina incerta.

Shell oblong, transparent horny; spire somewhat obtuse; whorls six, rather flattened, smooth, shining, faintly margined round the upper part; columella conspicuously truncated; aperture oblong, narrowed at the upper part. Length 12½ mill. (*Reeve.*)

Achatina incerta, *Reeve, Conch. Icon.* n. 90. t. 18.
Pfr. Mon. Suppl. 509.
Glandina incerta, *Morelet in Journ. Conch.* 1852, 35.
Locality unknown.

Very like *O. solidula*, from which it differs in being more ventricose towards the base.

16. Oleacina subulata.

Shell subcylindrical, attenuated each way, smooth, horny-fulvous, pellucid; spire elongate-conic, rather acute; whorls six to seven, the highest slightly convex, the rest rather level, marked with an opake line below the suture, the last less than three-sevenths the length; columella slightly oblique, narrowly truncated; aperture oblong; peristome simple, dextral margin arched in front, midway. Lon. 12, lat. 2⅔; ap. lon. 6, lat. 2 mill.

Polyphemus subulatus, *Pfr. in Wiegm. Arch.* 1839, 352.
Glandina subulata, *Pfr. Symb.* ii. 136.
Phil. Icon. i. 6. 132. t. 1. f. 10.
Alb. 198.
Helix orysaca, *Rang*, teste *Orb.*
Achatina orysaca, *Orb. Moll. Cub.* i. 167. t. 10. f. 20–25?
Achatina subulata, *Pfr. Mon. Helic.* ii. 282; *Ic.* n. 83. *Bul.* t. 38. f. 12, 13.
Reeve, Conch. Icon. t. 18. f. 89.
Hab. Cuba.

17. Oleacina follicularis.

Shell ovate, thin, smooth, pellucid, fulvous; spire short, blunt; whorls five, little convex; suture slightly bordered; columella scarcely arched, truncated; aperture narrow, oblong, forming more than half of the total length. Length 12, breadth 5 mill. (*Mor.*)

Glandina follicularis, *Morelet, Test. Noviss.* i. 14. n. 26.
Achatina follicularis, *Pfr. Mon. Suppl.* 510.
Hab. Isla de Pinos, near Cuba.

18. Oleacina suturalis.

Shell ovate, greenish-horny, thin, pellucid, shining; spire conic, rather acute; suture deep, rufous or blackish; whorls five and a half, convex, the last less than four-sevenths the length; columella nearly straight, white, slightly truncated obliquely at the base of the pointed-oblong aperture; peristome sharp, dextral margin sinuous in the middle. Lon. $10\frac{1}{2}$, lat. $4\frac{1}{2}$; ap. lon. $6\frac{1}{3}$, lat. 2 mill.

Polyphemus suturalis, *Pfr. in Wiegm. Arch.* 1839, i. 353.
Glandina suturalis, *Pfr. Symb.* ii. 136.
Phil. Icon. i. 6. 132. t. 1. f. 7.
Küster, t. 18. f. 22, 23.
Alb. 198.
Achatina suturalis, *Pfr. Mon. Helic.* ii. 285; *Ic.* n. 85. *Bul.* t. 38. f. 16–18.
Reeve, Conch. Icon. t. 20. f. 118.
Hab. Cuba.

19. Oleacina Antoniana.

Shell ovate-conoidal, pellucid, shining, yellowish-grey, minutely striated; whorls five, convex, the last equalling two-fifths the length; suture deep; aperture oblong-oval; peristome sharp; columella strongly truncated. Lon. $2\frac{1}{2}$, lat. $1\frac{1}{4}$ lin.

Achatina hyalina, *Anton, Verz.* 41. n. 1589 (not *Rang*).
Achatina Antoniana, *Pfr. Mon. Helic.* ii. 285.
Hab. S. America.

20. Oleacina crenulata.

Shell fusiform-ovate, rather solid, reddish-horny, shining; apex of the spire obtuse; whorls six and a half, slightly convex, the last descending, shorter than the spire; suture margined and very minutely crenulate; aperture dilated below; columella slightly arched, strongly truncated; peristome simple. Lon. 24, lat. 11; ap. lon. 11 mill.

Achatina crenulata, (*Sow.*?) *Ant. Verz.* 44. n. 1595.
Pfr. Mon. Helic. ii. 285.
Glandina crenulata, *Pfr. Symb.* ii. 59.
Hab. Central America.

21. Oleacina Ottonis.

Shell subfusiform, rather solid, yellowish-horny, shining; whorls six and a half, flattened, gradually increasing, the highest

ornamented with fine, close, longitudinal plaits, scarcely crossing the suture of the last whorl; suture impressed, elegantly crenulate; columella arched-truncate; aperture narrow; peristome simple, dextral margin enlarged in the middle. Lon. 12, lat. 4 mill.

Cochlicopa Ottonis, *Pfr. Symb.* i. 47.
Glandina Ottonis, *Pfr. Symb.* ii. 136.
Phil. Icon. i. 6. 132. t. 1. f. 5.
Alb. 197.
Achatina Ottonis, *Pfr. Mon. Helic.* ii. 286; *Ic.* n. 112. *Bul.* t. 44. f. 11–13.
Glandina semistriata, *Morelet, Test. Noviss.* i. 16. n. 32.
Hab. Cuba.

22. Oleacina sicilis.

Shell fusiform, much attenuated on both sides, rather solid, shining, pale horn-coloured, sculptured with minute plaits, which disappear on the last whorl; spire turreted; whorls eight, rather flattened; suture minutely crenulated; aperture very narrow, a little longer than the spire; columella rather short and straight, truncated arcuately; peristome simple, with the margins united by a thin callus. Length 16–17, breadth 6 mill. (*Mor.*)

Glandina sicilis, *Morelet, Test. Noviss.* i. 13. n. 24.
Pfr. Mon. Suppl. 512.
Hab. Guajaibon Mountains, Cuba.

23. Oleacina isabellina.

Shell fusiform-oblong, thin, shining, under a lens closely striated spirally, isabelline, pellucid; suture bordered with an impressed line; whorls six, slightly convex, the last scarcely shorter than the obtuse, conic spire; columella oblique, nearly straight, slightly truncated above the base of the elliptic-oblong aperture; peristome simple. Lon. 26, lat. 10; ap. lon. 13, lat. 5 mill.

Achatina isabellina (Glandina), *Pfr. in Proc. Zool. Soc.* 1846, 32; *Mon. Helic.* ii. 286.
Reeve, Conch. Icon. t. 21. f. 95.
Hab. Mexico.

24. Oleacina ornata.

Shell ovate-fusiform, longitudinally closely and regularly costulate, diaphanous, fulvous-reddish, ornamented with scattered

darker stripes; spire pyramidate, acute; suture crenulate-margined with a parallel furrow; whorls eight, very slightly convex, the last scarcely equalling the spire; columella nearly straight, abruptly truncated; aperture oblong, attenuated each way, pearly within. Lon. 72, lat. 31; ap. lon. 37, lat. 14 mill.

Achatina costulata, *Pfr. in Proc. Zool. Soc.* 1845, 75 (not *Adams*).
Achatina ornata, *Pfr. in Zeitschr. f. Mal.* 1846, 117; *Mon. Helic.* ii. 287.

Hab. New Granada.

25. Oleacina truncata. B.M.

Shell oblong-ovate, solid, very closely plicate-striated longitudinally, ashy rose-coloured; spire conic, rather acute; suture subcrenulate-margined; whorls six, very slightly convex, the last less than the spire; columella slightly arched, abruptly truncated at the base; aperture oval-oblong, narrowed each way; peristome sharp. Lon. 59, lat. 24; ap. lon. 31, lat. 12 mill.

Kämmerer, Conch. 128. t. 10. f. 5.
Bulla truncata, *Gmel.* 3434. n. 49.
Dillw. Descr. Cat. i. 493. n. 50.
Buccinum striatum, *Chemn.* ix. pt. 2. 36. t. 120. f. 1028, 1029.
Bulimus striatus, *Brug. Enc. Méth.* i. 366. n. 113.
Helix rosea (Cochlicopa), *Fér. Pr.* 356; *Hist.* t. 135. f. 3.
Achatina rosea, *Desh. in Encycl. Méth.* ii. 10. n. 3.
Achatina striata, *Lam. ed. Desh.* 35. 313.
Küster, t. 3. f. 3, 4.
Achatina truncata, *D'Orb. Moll. Cub.* i. 163. t. 10. f. 13, 14?
Pfr. Mon. Helic. ii. 287; *Ic.* n. 78. *Bul.* t. 38. f. 21, 22.
Reeve, Conch. Icon. t. 13. f. 47.
Desh. l. c. 179. n. 43.
Polyphemus glans, *Say in Philad. Journ.* i. 282.
Glandina truncata, *Say, Amer. Conch.* t. 20; *ed. Chemn.* (*Bibl. Conch.* iii.) 28. t. 7. f. 2, 2^a.
Beck, Ind. 78. n. 15.
Alb. 197.

Hab. Florida. Cuba? (*D'Orb.*)

Animal elongate, as long again as the shell, granulated; tentacles four, abruptly deflexed at the tips, lower one shorter; lips beneath the tentacula elongated, palpiform, almost as long as the upper tentacles, attenuated, acute at the tip, used to feel the way when the animal is in motion.—*Say.* See anatomy by Dr. Wyman, *Boston Journ. N. H.* iv. 416.

26. Oleacina bullata.

Shell papyraceous, inflated, diaphanous, ellipsoidal, white, tinged with rusty-brown, closely striated longitudinally; spire forming one-eighth of the total length; whorls five, moderately convex; suture middle; aperture forming two-thirds of the total length, broadly lunate; columella moderately arched, covered with a callous lamina. Length $1\frac{1}{2}$, breadth $\frac{4}{5}$ inch. (*Gould.*)

Glandina bullata, *Gould in Proc. Bost. Soc.* 1848, iii. 64.
Achatina bullata, *Pfr. Mon. Suppl.* 512.
Hab. Louisiana.

27. Oleacina striata. B.M.

Shell fusiform-oblong, solid, finely striated longitudinally, brownish-white, irregularly ornamented with narrow, rufous stripes; spire turreted-conic, apex rather obtuse; suture margined, subdenticulate; whorls seven to eight, slightly convex, the last less than the spire, attenuated at the base; columella scarcely arched, abruptly truncated at the base; aperture elliptic-oval; peristome straight, sharp. Lon. 56, lat. 20; ap. lon. 29, lat. 10 mill.

Buccinum striatum, *Müll. Verm.* ii. 149. n. 339.
Chemn. ix. t. 120. f. 1030.
Helix tenera, *Gmel.* 3653. n. 121.
Helix incumbens, *Dillw. Descr. Cat.* ii. 955. n. 154.
Helix Mülleri (Cochlicopa), *Fér. Pr.* 357.
Orb. Synops. 9.
Achatina striata, *Gray in Ann. Phil.* new ser. ix. 414.
Pfr. Mon. Helic. ii. 287.
Reeve, Conch. Icon. t. 6. f. 19.
Achatina Mülleri, *Gray, Griff. Anim. Kingd.* t. 27. f. 5.
Lam. ed. Desh. 33. 312.
Küster, t. 3. f. 9.
Guérin, Iconogr. Moll. t. 6. f. 14?
Reeve, Conch. Icon. t. 8. f. 25.
Achatina dactylus, *Brod. in Proc. Zool. Soc.* 1832, 32.
Müll. Synops. 31.
Reeve, Conch. Syst. ii. t. 179. f. 16.
Bulimus Mülleri, *D'Orb. Voy.* 256.
Glandina striata, *Beck, Ind.* 77. n. 2.
Alb. 197.

Hab. S. America; Cayenne (*Fér.*); Bolivia (*D'Orb.*); Island of Tumaco (*Cuming, Brod.*).

28. Oleacina Marminii.

Shell ovate-oblong, subfusiform, thin, pellucid, white, apex obtuse, longitudinally plaited; aperture longer than the spire; suture elegantly crenated. Lon. 53, lat. 21 mill.

Achatina Marminii, *Desh. in Encycl. Méth.* ii. 11. n. 5; *in Guér. Mag.* 1831, t. 19.
Küster, t. 3. f. 2 (fig. *Guér.*).
Pfr. Mon. Helic. ii. 288.
Glandina Marminii, *Beck, Ind.* 78. n. 16.
Alb. 197.

Hab. ——?

29. Oleacina turris.

Shell oblong-turreted, closely and lightly costulate-striate, rather thin, diaphanous, flesh-coloured; suture margined; whorls seven, very slightly convex, the last less than three-sevenths the length; columella vertical, not reaching the base, abruptly truncated; aperture semioval, subdilated below. Lon. 43, lat. 15; ap. lon. 19, lat. 8 mill.

Achatina turris (Glandina), *Pfr. Symb.* iii. 91; *Mon. Helic.* ii. 288.
Reeve, Conch. Icon. t. 13. f. 45.
Desh. l. c. 186. n. 51. t. 134. f. 1, 2.

Hab. ——?

30. Oleacina candida.

Shell fusiform, acuminate, rather thin, slightly shining, sculptured with indistinct distant plaits, white; spire conic, acuminate, with the apex blunt; whorls six, enlarging gradually, moderately convex, the last as long as the spire; suture bordered and slightly crenulated; columella arched, abruptly truncated at its base; aperture acuminately semioval; peristome simple, sharp, straight. Length 24, breadth 9 mill. (*Sh.*)

Achatina candida (Polyphemus), *Shuttleworth in Bern. Mittheil.* 1852, 202.
Pfr. Mon. Suppl. 512.

Hab. Mexico (*Sandoz, Nicolet*).

31. Oleacina dominicensis.

Shell ovate-fusiform, thin, finely and very closely costulate-striate, shining, rufescent-rosy, ornamented with broad, distant, chestnut stripes; spire conoidal, obtuse; whorls seven, slightly convex, the last scarcely shorter than the spire, spotted with interrupted stripes towards the base; columella slightly arched, obliquely truncated at the base of the semioval aperture; peri-

stome simple, dextral margin dilated angularly below the middle. Lon. 34, lat. 12; ap. lon. 18, lat. 6½ mill.

Bulla turrita et maculata, *Chemn.* ix. pt. 2. 17. t. 117. f. 1011.
Bulla dominicensis, *Gmel.* 3433. n. 41.
Dillw. Cat. i. 487. n. 35.
Helix dominicensis (Cochlicopa), *Fér. Pr.* 364.
Bulimus maculatus, *Brug. Enc. Méth.* i. 365. n. 112.
Achatina fusco-lineata, *Lam.* 16. 133, *ed. Desh.* 302.
Küster, t. 7. f. 12.
Achatina dominicensis, *Desh. in Lam.* 302.
Anton, Verz. 44. n. 1593.
Pfr. Mon. Helic. ii. 289.
Reeve, Conch. Icon. t. 14. f. 56.
Polyphemus Bruguiereus, *Bowd. Elem.* t. 12. f. 11.
Glandina maculata, *Beck, Ind.* 77. n. 3.
Glandina dominicensis, *Pfr. Symb.* ii. 135.
Alb. 198.
Hab. Haiti.

32. Oleacina semisulcata.

Shell elongate, subturreted, apex obtuse, fulvous, marked with distant brown flamelets, regularly striated, smooth at the base; aperture very small, subtriangular; columella much contorted. Lon. 37 mill.

Achatina semisulcata, *Desh. in Enc. Méth.* ii. 11. n. 7; *in Fér.* ii. 186. n. 52. t. 123. f. 7, 8.
Pfr. Mon. Helic. ii. 290.
Achatina dominicensis, var.?, *Desh. in Lam.* 302.
Glandina semisulcata, *Beck, Ind.* 77. n. 4.
Hab. ——?

33. Oleacina procera.

Shell fusiformly turreted, rather thin, sculptured longitudinally and crowdedly with fold-like ribs, silk-shining, diaphanous whitish, irregularly marked with broad chestnut streaks, which are interrupted on the middle of the last whorl; spire elongate with the apex rather pointed; suture deep; whorls ten, convex, the last forming two-fifths of the total length, slightly impressed at its middle part; columella obliquely twisted, produced to the channeled base of the aperture, which is sinuately semiovate; peristome rather simple, with the right margin flexuous, angularly produced in the middle. Length 30, breadth 9½ mill. (*Pfr.*)

Achatina procera, *Adams, Contrib. to Conch.* n. 2. p. 24.
Pfr. Mon. Suppl. 513.
Hab. Jamaica.

34. Oleacina monilifera.

Shell fusiform-ovate, thin, pellucid, regularly costulate-striate, ribs vanishing on the middle of the penultimate whorl, fulvous-rosy, ornamented with remote, rufous, pale-margined lines; spire short, conic; suture elegantly and closely granulose; whorls seven, nearly level, the last less than three-fifths the length, ventricose; columella scarcely arched, abruptly truncated at the base; aperture narrow, semioval. Lon. 29, lat. 14½; ap. lon. 19, lat. 6½ mill.

Achatina monilifera (Glandina), *Pfr. in Proc. Zool. Soc.* 1845, 75; *Mon. Helic.* ii. 290.

Reeve, Conch. Icon. t. 14. f. 50.

Hab. Central America; Coban, near Vera Cruz.

35. Oleacina rubella.

Shell ovate-fusiform, pellucid, thin, sculptured with rib-like striæ, reddish horn-coloured, irregularly marked with distant brown lines; spire conic, very variable in length; suture very minutely granulose; whorls seven to eight, moderately convex, last ventricose; columella almost rectilinear, sometimes twisted, abruptly truncated; aperture narrow; peristome sharp, with the outer margin slightly dilated in the middle, bordered with brown externally, united with the columellar one by a thin callus. Length 28–32, breadth 14 mill. (*Mor.*)

Glandina rubella, *Morelet, Test. Noviss.* i. 14. n. 27.

Achatina rubella, *Pfr. Mon. Suppl.* 513.

Hab. Vera Paz, Central America.

This may be a variety of *O. monilifera*, Pfr.

36. Oleacina stigmatica.

Shell fusiformly ovate, thin, striated indistinctly and minutely, shining, horny, marked with distant, rather broad, brownish chestnut-coloured streaks; spire conic, blunt; whorls seven, moderately convex, the last forming three-fifths of the total length; suture bordered very narrowly and crenulated minutely; columella scarcely arched, abruptly truncated at its base; aperture semiovate; peristome sharp, right margin rather flexuous, with the edge fuscous. Length 14, breadth 5 mill. (*Sh.*)

Achatina stigmatica (Polyphemus), *Shuttleworth in Bern. Mittheil.* 1852, 202.

Pfr. Mon. Suppl. 514.

Hab. Cordova, Vera Cruz (*Jacot-Guillarmod*).

37. Oleacina delicatula.

Shell ovate-fusiform, thin, diaphanous, closely folded and furrowed, very shining, flesh-coloured-horny, marked with distant narrow reddish-brown streaks, which are bordered with whitish; spire raised, conic, blunt; whorls eight, convex, the last forming three-fifths of the total length; suture impressedly bordered, crenulated; columella arched, abruptly truncated at its base; aperture semiovate, somewhat dilated in front; peristome sharp, straight, with the edge pale. Length 17, breadth 8 mill. (*Sh.*)

Achatina delicatula (Polyphemus), *Shuttleworth in Bern. Mittheil.* 1852, 202.
Pfr. Mon. Suppl. 514.

Hab. Vera Cruz.

38. Oleacina Griffithsii. B.M.

Shell fusiform-turreted, longitudinally closely costulate-striated, horny straw-coloured, ornamented with scattered rufous stripes; spire elongate, turreted, apex rather acute; whorls ten, very slightly convex, the last scarcely equalling two-fifths the length, impressed in the middle, rather gibbous at the base; columella obliquely twisted, obliquely truncated at the base of the aperture; aperture irregular, sinuous-oblong; peristome somewhat thickened within, white, dextral margin angularly dilated in the middle. Lon. 22, lat. $6\frac{1}{2}$; ap. lon. 9, lat. $3\frac{1}{2}$.

Achatina Griffithsii, *Adams in Proc. Bost. Soc.* 1845, 14.
Pfr. Mon. Helic. ii. 290; *Ic.* n. 54. *Bul.* t. 27. f. 4, 5.
Reeve, Conch. Icon. t. 15. f. 64.
Alb. 195 (Melia).

Bulimus Griffithii, *Adams in sched. olim.*

Glandina Griffithii, *Pfr. in Zeitschr. f. Malak.* 1845, 158.
Morelet in Journ. Conch. 1852, 39.

Hab. Jamaica.

39. Oleacina ligata.

Shell turreted, somewhat fusiform, thin, closely sculptured with longitudinal hair-like striæ, silk-shining, pale fulvous, irregularly marked with narrow, distant, reddish-brown streaks; spire turreted; apex rather pointed; suture impressed; whorls eight, scarcely convex, the last forming three-fifths of the total length, varicose, furrowed and constricted in the middle; columella short, almost rectilinear, truncated obliquely; aperture irregular, rather triangular; peristome slightly expanded, with the con-

stricted part thickened internally, and with the lower part retreating somewhat angularly. Length 17, breadth 5⅓ mill. (*Pfr.*)

Achatina ligata, *Adams, Contr. to Conch.* n. 2. p. 25.
Pfr. Mon. Suppl. 514.

Hab. Jamaica.

40. Oleacina jamaicensis.

Shell fusiform-turreted, closely and vertically ribbed, shining, whitish, ornamented with a few rufous stripes; spire turreted, rather acute; suture crenulate, submarginate; whorls ten, nearly level, the last less than one-third the length, many-varicose, nearly smooth below the middle, attenuated; columella nearly straight, obliquely truncated at the base; aperture narrow, semioval. Lon. 22, lat. 7; ap. lon. 7, lat. 3 mill.

Achatina jamaicensis (Glandina), *Pfr. in Proc. Zool. Soc.* 1845, 137; *Mon. Helic.* ii. 291.
Reeve, Conch. Icon. t. 15. f. 61.

Hab. Jamaica.

41. Oleacina Philippiana. B.M.

Shell ovate-subfusiform, thin, shining, very closely costulate, lutescent-greyish, ornamented with broad, decurrent, deep chestnut stripes; spire conoidal, rather obtuse; whorls eight, the lower rather tumid below the suture, the last equalling four-ninths the length; columella slightly arched, obliquely truncated; aperture oblong-oval, concolorous within; peristome simple, broadly chestnut-margined. Lon. 22, lat. 9; ap. lon. 10½, lat. 4 mill.

Achatina (Glandina) Philippiana, *Pfr. Symb.* iii. 90; *Mon. Helic.* ii. 291.
Reeve, Conch. Icon. t. 14. f. 49.

β. With the ribs more subtle and the streaks narrower.
Achatina elegans, *Adams, l. c.* 25.

Hab. Jamaica.

42. Oleacina tortillana.

Shell subfusiform-ovate, rather solid, regularly sculptured with close longitudinal striæ, shining, pellucid, pale horny, irregularly marked with opake lutescent spots and stripes; suture submarginate; whorls seven and a half, slightly convex, the last scarcely exceeding the obtuse conic spire; columella strongly arched, abruptly truncated above the base of the elliptic-oblong aperture;

peristome simple, obtuse, dextral margin subdilated in the middle. Lon. 20, lat. 8 ; ap. lon. 10, lat $3\frac{2}{3}$ mill.

Achatina (Glandina) Tortillana, *Pfr. in Proc. Zool. Soc.* 1846, 32; *Mon. Helic.* ii. 291.

Reeve, Conch. Icon. t. 15. f. 66.

Hab. Tortilla, Central America.

43. Oleacina yucatanensis.

Shell ovate-oblong, rather solid, longitudinally closely plicatulate, fulvescent-hyaline ; spire elongate-conic, apex obtuse ; suture smooth, marginate, denticulate ; whorls six, convex, the last less than four-ninths the length ; columella slightly arched, abruptly truncated near the base of the aperture ; aperture subrhombic oval, pointed above ; peristome simple. Lon. 23, lat. $9\frac{1}{2}$; ap. lon. 11, lat. $4\frac{1}{2}$ mill.

Achatina (Glandina) yucatanensis, *Pfr. Symb.* iii. 92; *Mon. Helic.* ii. 291.

Hab. Yucatan.

44. Oleacina venusta. B.M.

Shell ovate-turreted, thin, closely longitudinally striated, pellucid, rosy, ornamented with narrow whitish and brown longitudinal stripes (the brown vanishing from the middle of the last whorl) ; spire turreted, rather acute ; suture margined ; whorls seven, nearly level, the last shorter than the spire ; columella nearly vertical, twisted, obliquely truncated at the base of the elliptic-oblong aperture ; peristome simple, sometimes white-margined. Lon. 18, lat. 7 ; ap. lon. 8, lat. 3 mill.

Cochlicopa venusta, *Pfr. Symb.* i. 46.

Glandina venusta, *Phil. Icon.* i. 6. 133. t. 1. f. 9.

Achatina venusta, *Pfr. Mon. Helic.* ii. 291 ; *Ic.* ii. 87. *Bul.* t. 38. f. 23, 24.

Reeve, Conch. Icon. t. 15. f. 63.

Achatina (Melia) venusta, *Alb.* 195.

Hab. Jamaica ; var. Demerara.

45. Oleacina nemorensis.

Shell oblong, rather fusiform, thin, closely and longitudinally striated, silk-shining, pellucid, fulvous rose-coloured, irregularly marked with narrow, slightly arcuate chestnut streaks ; spire turreted ; apex rather blunt ; suture impressed, slightly bordered ; whorls seven, scarcely convex, the last forming a little more than two-fifths of the total length ; columella perpendicular, straight, obliquely and narrowly truncated at its base ; aperture narrow,

rather semiovate; peristome simple, sharp, right margin gradually retreating below the middle. Length 20, breadth 6 mill. (*Pfr.*)

Achatina nemorensis, *Adams, Contr. to Conch.* n. 2. p. 25.
Pfr. Ic. n. 86. *Bul.* t. 38. f. 19, 20; *Mon. Suppl.* 515.

Hab. Jamaica.

46. Oleacina similis.

Shell similar to *O. nemorensis*, but the outlines of the spire are nearly rectilinear, and consequently the spire is more slender; the surface is highly polished and has but a few excessively fine transverse striæ; the brown stripes are wider. It also resembles *O. Phillipsii*, but its spire is shorter, with a greater divergence. Length 0·75, breadth 0·23 inch. (*Ad.*)

Achatina similis, *Adams, Contr. to Conch.* n. 7. p. 103.
Pfr. Mon. Suppl. 515.

Hab. Jamaica.

47. Oleacina nitida.

Shell elongated, ovate-fusiform, reddish-brown, with very dark brown transverse stripes, about four or five on each whorl; varicose coincidently with the brown stripes, the varices being indicated by the thickening of the shell within, and a deeply impressed line in front of each; well-polished and shining; apex subacute; spire with the outlines rectilinear, or moderately convex, with a well-impressed suture; aperture long ovate, very acute above; labrum sharp, subangular at two-thirds of the distance from its upper extremity; columella much curved, broadly truncated. Length 0·96, greatest breadth 0·31, least breadth 0·3 inch. (*Adams.*)

Achatina nitida, *Adams, Contrib. to Conch.* n. 7. p. 103.
Pfr. Mon. Suppl. 515.

Hab. Jamaica.

48. Oleacina Ingallsiana.

Shell fusiform, pale brownish, with but four or five dark brown transverse stripes, with very minute rather numerous but not crowded transverse striæ; spire with moderately convex outlines; apex rather small; whorls seven, moderately convex, with a well-impressed finely corded suture; aperture very long, rather narrow; lip thin, with the edge sharp and curved forwards; columella moderately produced and arcuate. Length 0·75, breadth 0·25 inch. (*Adams.*)

Achatina Ingallsiana, *Adams, Contrib. to Conch.* n. 2. p. 25.
Pfr. Mon. Suppl. 516.

Hab. Jamaica.

49. Oleacina unicolor.

Species similar to the preceding, but the shell is uniformly light brown, without any dark stripes; the striæ are rather more strongly impressed; the columella is not arcuate, and the form is rather more slender. Length 0·7, breadth 0·21 inch. (*Adams.*)

Achatina unicolor, *Adams, Contrib. to Conch.* n. 2. p. 26.
Pfr. Mon. Suppl. 516.

Hab. Jamaica.

50. Oleacina angiostoma.

Shell fusiform, pale reddish, with transverse rather narrow dark brown stripes, of which there are about four on each whorl, except on the first three; with extremely fine crowded transverse striæ; spire with moderately convex outlines; apex rather small; whorls seven, moderately convex, with a well-impressed suture; aperture very long and narrow; labrum very thin and sharp; columella produced to an extraordinary degree, straight, a little twisted. Length 0·72, breadth 0·22 inch. (*Adams.*)

Achatina angiostoma, *Adams, Contrib. to Conch.* n. 2. p. 25.
Pfr. Mon. Suppl. 516.

Hab. Jamaica.

51. Oleacina nana.

Shell ovate, rather thin, sculptured with regular and crowded slight ribs and furrows, fuscous, with a pale band along the suture; spire conic, rather pointed; whorls six, moderately convex, the last about twice as long as the spire; columella strongly arched, abruptly truncated at its base; aperture semiovate; peristome straight, sharp. Length 13, breadth 6 mill. (*Sh.*)

Achatina nana (Polyphemus), *Shuttleworth in Bern. Mittheil.* 1852, 202.
Pfr. Mon. Suppl. 516.

Hab. Cordova, Vera Cruz (*Jacot-Guillarmod*).

52. Oleacina fusiformis.

Shell ovate-fusiform, thin, longitudinally closely costulate, minutely reticulated with transverse lines, fulvous, with darker stripes; spire conic, rather acute, apex reddish; suture margined; whorls seven to eight, slightly convex, the last a little exceeding the spire, attenuated at the base; columella slightly arched, abruptly truncated, reddish; aperture narrow, oblong; peristome simple, bent back, margin rubicund. Lon. 87, lat. 35; ap. lon. 50, lat. 16 mill.

Achatina fusiformis, *Pfr. in Proc. Zool. Soc.* 1845, 75; *Mon. Helic.* ii. 292.
Reeve, Conch. Icon. t. 9. f. 31.
Desh. l. c. 181. n. 45. t. 137. f. 1–3.
Hab. Mt. Coban, near Vera Cruz, Central America.

53. Oleacina Sowerbyana.

Shell ovate-fusiform, rather thin, diaphanous, closely plicated longitudinally, unequally decussate-granulated by distant spiral striæ, fulvous-reddish, ornamented with remote brown stripes; spire conic, apex acute; suture white-margined, crenulated; whorls seven and a half, nearly level, the last less than five-ninths the length; columella arched, abruptly truncated at the base; aperture pointed-oblong; peristome simple, margins united by a thin callus, dextral bent back. Lon. 88, lat. 38; ap. lon. 52, lat. 20 mill.

Achatina Sowerbyana (Glandina), *Pfr. in Proc. Zool. Soc.* 1846, 32; *Mon. Helic.* ii. 293.
Reeve, Conch. Icon. t. 8. f. 26.
Glandina, *Alb.* 198.
Hab. Totontepec, Mexico.

Var. 1. Elongate.
Achatina lignaria, *Reeve, Conch. Icon.* t. 8. f. 27.
Hab. ——? (Mus. Dennison.)

54. Oleacina aurata.

Shell oblong-fusiform, solid, opake, violaceous, covered with a deciduous, silk-shining, brownish-yellow periostraca, granularly decussated, yellowish near the aperture, pearly within; suture bordered, whitish, denticulate, irregular; whorls six, moderately convex, the last a little shorter than the spire, attenuated in front; columella arched, truncated obliquely; aperture elliptical; peristome straight, sharp, with the margins thickened. Length 87, breadth 36 mill. (*Mor.*)

Glandina aurata, *Morelet, Test. Noviss.* i. 12. n. 20.
Achatina aurata, *Pfr. Mon. Suppl.* 517.
Hab. Woods in the province of Vera Paz, Guatemala.

55. Oleacina coronata.

Shell ovate-oblong, rather thin, subdiaphanous, longitudinally closely plicated, irregularly decussated with distant, impressed, spiral lines, vanishing below the middle of the last whorl, flesh-coloured, ornamented with brownish spots, with some fainter in

front; spire conic, rather acute; suture crowned with strong distant teeth; whorls seven, very slightly convex, the last less than five-ninths the length; columella strongly arched, abruptly truncated at the base; aperture oblong, semioval. Lon. 88, lat. 35; ap. lon. 52, lat. 20 mill.

Achatina coronata, *Pfr. in Zeitschr. f. Mal.* 1846, 158; *Mon. Helic.* ii. 293; *Ic.* n. 77. *Bul.* t. 38. f. 1, 2.
Glandina, *Alb.* 198.
Hab. Mexico.

56. Oleacina lignaria.

Shell oblong-cylindrical, light brown bay, somewhat obscurely and irregularly marked with streaks of a darker colour; whorls eight, sculptured throughout with oblong granules, rudely crenulated at the sutures; columella abruptly truncated; aperture rather small. Length 94, breadth 32 mill. (*Reeve.*)

Achatina lignaria, *Reeve, Conch. Icon.* n. 27. t. 8.
Pfr. Mon. Suppl. 517.
Locality unknown.

57. Oleacina Liebmanni.

Shell subfusiform-oblong, solid, longitudinally plicated, the interstices obsoletely decussated with close spiral lines, whitish; spire conic, rather obtuse; suture elegantly crenulate; whorls eight, slightly convex, the last less than the spire; columella straightish, subvertical, abruptly truncated above the base of the narrow semioval aperture. Lon. 67, lat. 26; ap. lon. 35, lat. 12 mill.

Achatina Liebmanni, *Pfr. in Zeitschr. f. Mal.* 1846, 159; *Mon. Helic.* ii. 293; *Ic.* n. 5. *Bul.* t. 23. f. 4, 5.
Achatina striata, *Reeve, Conch. Icon.* n. 19. t. 6.
Glandina Liebmanni, *Alb.* 198.
Hab. Mexico.

58. Oleacina plicatula.

Shell oblong-fusiform, thin, sculptured with crowded faint longitudinal folds, obsoletely decussated with spiral striæ, diaphanous, little shining, brownish flesh-coloured; spire elongate conic, with the apex blunt; suture bordered and minutely crenulated; whorls seven, scarcely convex, the last as long as the spire, a little more convex, attenuated in front; columella callous, scarcely arched, abruptly truncated at the base of the aperture,

which is semiovate and very shining within; peristome simple, thin. Length 60, breadth 25 mill. (*Pfr.*)

Achatina plicatula, *Pfr. in Proc. Zool. Soc.* 1851, p. ; *Ic.* n. 38. *Bul.* t. 26. f. 2; *Mon. Suppl.* 517.

Hab. Andes, New Granada.

59. Oleacina conspersa.

Shell oblong, somewhat fusiform, rather thin, striated longitudinally and decussated with transverse striæ, which are more obsolete towards the base, shining, fuscous, conspersed with whitish spots; spire elongate conic, with the apex rather blunt; suture crenated with strong whitish teeth; whorls six, scarcely convex, the last a little shorter than the spire, slightly attenuated in front; columella nearly rectilinear, broadly and abruptly truncated above the base of the aperture, which is almost perpendicular, sinuately semiovate; peristome simple, sharp. Length 60, breadth 23 mill. (*Pfr.*)

Achatina conspersa, *Pfr. in Proc. Zool. Soc.* 1851, p. ; *Mon. Suppl.* 518.

Locality unknown.

60. Oleacina fulminea.

Shell turreted, very finely decussated, ornamented with oblong-quadrate spots and angular wavy stripes of violet-red, alternately separate, on a whitish ground; suture crisped; spire, apex obtuse; whorls eight to nine, slightly convex, the last a little exceeding one-third the length; columella slightly arched, obliquely truncated at the base of the aperture; aperture narrow, oval-oblong. Lon. 64, lat. 19; ap. lon. 25, lat. 10.

Helix fulminea (Cochlicopa), *Fér. Pr.* 366.
Achatina fulminea, *Lam.* xvii. 133, *ed. Desh.* 303.
Deless. Recueil, t. 28. f. 6.
Pfr. Mon. Helic. ii. 293.
Glandina fulminea, *Beck, Index*, 77. n. 1.
Hab. ——?

61. Oleacina rosea. B.M.

Shell ovate, attenuated each way, diaphanous, uniformly fulvous-rosy, closely striated and granulated between the striæ; spire conic, rather obtuse; suture margined and denticulate; whorls six and a half, slightly convex, the highest glabrous, the last exceeding the spire; columella nearly straight, rather callous, abruptly truncated; aperture elliptic-oblong, pointed above. Lon. 60, lat. 24; ap. lon. 32, lat. 12 mill.

Helix rosea (Cochlicopa), *Fér. Pr.* 356; *Hist.* t. 136. f. 8, 9.
Achatina rosea, *Gray in Ann. Phil.* new ser. ix. 414.
Pfr. Mon. Helic. ii. 294; *Ic.* n. 55. *Bul.* t. 27. f. 6, 7.
Desh. in Fér. 180. n. 44.
Reeve, Conch. Icon t. 13. f. 46.
Glandina rosea, *Pfr. in Phil. Icon.* i. 6. 133. t. 1. f. 2.
Glandina Cumingii, *Beck, Index*, 78. n. 13.
Alb. 198.
Hab. Central America; γ. Honduras.

62. Oleacina Petiti.

Shell ovate-oblong, rather solid, pale straw-yellow, sculptured with very crowded longitudinal fold-like striæ and with very minute transverse striæ; spire conic, blunt; whorls six, moderately convex, last ovate, longer than the spire; suture bordered and crenulate; aperture ovate-oblong, narrow, acuminated posteriorly; columella cylindrical, arched, abruptly truncated at its base; peristome simple, blunt. Length 40, breadth 19 mill. (*Desh.*)

Achatina Petiti, *Desh. in Fér. Hist.* ii. p. 175. n. 38. t. 122. f. 12–14.
Pfr. Mon. Suppl. 518.
Glandina Petiti, *Morelet in Journ. Conch.* 1852, i. 37. 42. t. 1. f. 5.
Hab. Vicinity of Lake Nicaragua, Central America.

63. Oleacina Vanuxemensis.

Shell ovate-fusiform, thin, pellucid, fulvous-rosy, whitish spotted, decussated with longitudinal and transverse striæ from the apex to the middle of the last whorl; suture crenulate, papillate; spire conic, rather acute; whorls six, slightly convex, the last equalling three-fifths the length; columella arched, abruptly truncated; aperture oval-oblong. Lon. 53, lat. 24; ap. lon. 34, lat. 12 mill.

Achatina Vanuxemensis, *Lea, Obs.* i. 196. t. 19. f. 78 (Glandina).
Pfr. Symb. iii. 91; *Mon. Helic.* ii. 294.
Reeve, Conch. Icon. t. 13. f. 48.
Glandina, *Alb.* 198.
Hab. Mexico.

64. Oleacina Carminensis.

Shell oblong-fusiform, solid, longitudinally and crowdedly folded, obsoletely decussated between the folds, whitish or reddish-fuscous; spire elongate conic, with the apex rather blunt; suture granularly bordered; whorls seven, convex, the last about as long as the spire; columella callous, straight, truncated;

aperture ovate; peristome simple, with the margins joined by a thin callus. Length 49, breadth 20 mill. (*Mor.*)

Glandina Carminensis, *Morelet, Test. Noviss.* i. 14. n. 28; *Journ. Conch.* 1851, i. 42. t. 1. f. 1–4 (animal).
Achatina rosea, var., *Reeve, Conch. Icon.* t. 13. f. 466.
Achatina Carminensis, *Desh. in Fér. Hist.* ii. 182. n. 46. t. 137. f. 11–13.
Pfr. Mon. Suppl. 518.

Hab. Isle of Carmen, Yucatan.

65. Oleacina decussata.

Shell oblong-ovate, somewhat fusiform, solid, attenuated on both sides, decussated with very crowded longitudinal striæ and smaller transverse lines; reddish-fulvous; spire conic, with the apex blunt; whorls seven, rather flat, the penultimate one broader, the last ovate, attenuated in front; suture bordered and crenulated; aperture elongate, narrow, attenuated at each extremity; peristome simple, sharp; columella narrow, cylindrical, twisted at its fold-shaped base. Length 45, breadth 18 mill. (*Desh.*)

Achatina decussata, *Desh. in Fér. Hist.* ii. 182. n. 47. t. 123. f. 3, 4; t. 134. f. 33–35.
Pfr. Mon. ii. 519.

Locality unknown.

66. Oleacina Daudebarti.

Shell oblong, rather turreted, thin, glassy, pale fulvous, decussated with slight rib-like striæ and minute transverse striæ, attenuated at both extremities; suture bordered, crenate; spire elongate, with the apex blunt; whorls six and a half, enlarging gradually, the first ones smooth, the last as long as the spire, ovate, rather obtuse in front; aperture narrowly ovate, attenuated posteriorly, dilated in the middle and in front; columella narrow, twisted, cylindrical, scarcely concave, truncated obliquely. Length 62, breadth 22 mill. (*Desh.*)

Helix rosea var. elongata, *Fér. Hist.* t. 135. f. 1, 2.
Achatina Daudebarti, *Desh. in Fér.* ii. 183. n. 18.
Pfr. Mon. Suppl. 519.
Achatina Audebarti, *Desh. ib. in Ind.* 19.
Hab. Central America.

67. Oleacina peruviana.

Shell cylindrical-fusiform, thin, pellucid, longitudinally very elegantly striated, slightly decussated with transverse striæ, white,

variegated with reddish-brown flamelets and linelets; suture slightly channeled; whorls nine, nearly level, the last exceeding the spire, furnished with incumbent ribs; columella rather arched, truncated at the base, transversely lamellose; aperture narrow, oblong; peristome simple. Lon. 48, lat. 18; ap. lon. 25, lat. 8 mill.

Achatina peruviana, *Lam.* xiv. 132, *ed. Desh.* 301.
Desh. Encycl. Méth. ii. 10. n. 4; *Hist. Moll.* 185. n. 50.
Deless. Recueil, t. 28. f. 5.
Pfr. Mon. Helic. ii. 294.
Reeve, Conch. Icon. t. 14. f. 57.
Helix pretiosa (Cochlicopa), *Fér. Pr.* 362 bis; *Hist.* t. 135. f. 4.
Glandina peruviana, *Beck, Index*, 78. n. 8.
Hab. Peru.

68. Oleacina Largillierti.

Shell oblong-attenuated, thin, very finely and closely longitudinally plicatulate, obsoletely decussated with impressed concentric lines, pellucid, fulvescent-hyaline; spire elongated, obtuse; suture smooth, denticulated; whorls seven, slightly convex, the last scarcely exceeding two-fifths the length; columella arched, slightly truncated above the base of the aperture; aperture pointed-oval, rounded at the base; peristome simple. Lon. 28, lat. 10; ap. lon. 12, lat. 5 mill.

Achatina Largillierti (Glandina), *Pfr. Symb.* iii. 90; *Mon. Helic.* ii. 295.

Hab. Yucatan.

69. Oleacina carnea.

Shell ovate-oblong, rather solid, minutely decussated with spiral and longitudinal striæ, which become indistinct below the middle of the last whorl, diaphanous, silk-shining, flesh-coloured; spire gradually tapering, with the apex blunt; suture denticulated elegantly and crowdedly; whorls six, moderately convex, the last scarcely shorter than the spire, slightly attenuated in front; columella slightly arched, abruptly truncated; aperture perpendicular, semiovate, rather rhomboidal; peristome simple, straight, blunt. Length 27, breadth 11 mill. (*Pfr.*)

Achatina carnea, *Pfr. in Proc. Zool. Soc.* 1851, p. ; *Ic.* n. 36. *Bul.* t. 25. f. 28–30; *Mon. Suppl.* 519.
Glandina cylindracea, *Phillips in Proc. Acad. Philad.* 1848, iii. 67, t. 1. f. 33?

Hab. Central America.

70. Oleacina Gayana.

Shell turreted, rather fusiform, thin, sculptured with very minute longitudinal plaits, pellucid, reddish-yellow; spire turreted, rather pointed; whorls seven, moderately convex, marked with very short distant reddish-brown streaks near the suture, which is simple; last whorl forming less than two-fifths of the total length, somewhat attenuated in front; columella slightly folded, receding, shortly and obliquely truncated; aperture nearly perpendicular, narrow, oblong; peristome simple, with the right margin rather rectilinear, arcuately dilated forwards. Length 21, breadth 7 mill. (*Pfr.*)

Achatina Gayana, *Adams, Contr. to Conch.* n. 7. p. 103.
Pfr. Mon. Suppl. 491.

Hab. Jamaica.

71. Oleacina portoricensis.

Shell turreted-oblong, smooth, irregularly sculptured with impressed longitudinal lines, shining, ornamented with darker stripes; spire elongate, rather obtuse; whorls eight, nearly level, the last a little exceeding one-third the length; columella arched in front, abruptly truncated near the base of the aperture; aperture elliptic-semioval; peristome simple. Lon. 20, lat. 7; ap. lon. 8, lat. 3½ mill.

Achatina portoricensis, *Pfr. in Proc. Zool. Soc.* 1848; *Mon. Helic.* ii. 258.
Reeve, Conch. Icon. t. 18. f. 93.

Hab. St. John's, Porto Rico.

72. Oleacina Phillipsii. B.M.

Shell fusiform-cylindrical, longitudinally striatulate, shining, pale horny, adorned with chestnut streaks, irregularly disposed on the last whorl, not extending to the base; spire elongate, apex rather obtuse; suture margined, subcrenulate; whorls eight, rather flattened, the last scarcely exceeding one-third the length; columella slightly arched in front, obliquely truncated; aperture narrow, semioval; peristome simple, sharp. Lon. 20, lat. 5½; ap. lon. 7, lat. 2⅔ mill.

Achatina Phillipsii, *Adams in Proc. Bost. Soc.* 1845, p. 13 (Glandina).
Pfr. in Zeitschr. f. Mal. 1845, p. 158; *Ic.* n. 57. *Bul.* t. 28. f. 4, 5; *Monogr. Helic.* ii. 265.
Phil. Icon. ii. 16. 216. t. 1. f. 4.
Reeve, Conch. Icon. t. 15. f. 60.
Alb. 195 (Melia).

Glandina Phillipsii, *Morelet in Journ. Conch.* 1852, i. 397.
Hab. Jamaica; Savannah la Mar.

73. Oleacina propinqua.

Shell somewhat fusiformly turreted, sculptured with rib-like striæ, shining, horn-coloured, marked with slightly arcuate reddish-brown lines, which for the most part are bordered with white; whorls seven to eight, rather flat, the last forming about two-sevenths of the total length; columella nearly perpendicular, truncated shortly and obliquely at its base; aperture oblong, angulated; peristome simple, with the right margin receding inferiorly. Length 14, breadth 8½ mill. (*Pfr.*)

Achatina propinqua, *Adams in Bost. Proc.* 1845, p. 13.
Pfr. Mon. iv. 265. n. 65; *Suppl.* 492.
Hab. Jamaica.

74. Oleacina Blandiana.

Shell regularly conic, but very slender, very pale brown or horn-colour, with very dark brown transverse broad bent stripes, about three on each whorl, less distinct on the upper whorls, and wanting on the nuclear whorls, with rather fine regular transverse striæ; rather thickly and very finely crenulated at the upper margin of the whorls; apex moderately obtuse, smooth on the first whorl; spire very long, with the outlines rectilinear; whorls nine, moderately convex, slightly and acutely shouldered above, with a well-impressed suture; aperture rather long-ovate, small; labrum sharp, very thin; columella nearly straight (most nearly allied to *O. propinqua*). Length 0·62, breadth 0·135 inch. (*Ad.*)

Achatina Blandiana, *Adams, Contr. to Conch.* n. 5. p. 83.
Pfr. Mon. Suppl. 492.
Hab. Jamaica.

75. Oleacina proxima.

Shell conic, but slender, very pale brown or horn-colour, with dark brown transverse stripes, about three on each whorl, less distinct on the upper whorls; with fine regular transverse small elevated lamellæ; apex moderately obtuse, smooth on the nuclear whorls; spire long, with the outlines nearly rectilinear; whorls eight, planulate, abruptly shouldered above, with a rather deep suture; aperture small, ovate; labrum thin and sharp; columella nearly straight. Length 0·385, breadth 0·095 inch. (*Adams.*)

Achatina proxima, *Adams, Contrib. to Conch.* n. 9. p. 167.
Pfr. Mon. Suppl. 655.

Hab. Near Swift River Head, Portland, Jamaica.

This shell resembles *O. Blandiana*. Its divergence in the upper whorls is less than in that shell, but its mean divergence is greater.

76. Oleacina perplexa.

Shell ovate-fusiform, much elongated, almost transparent, pale yellowish-brown, with transverse moderately curved lines of dark brown, of which the last colours the labrum, three to four on each whorl, wanting on the upper whorls, and scarcely perceptible at and above the middle of the spire; with fine, not crowded, transverse striæ; lines, which indicate the varices that are coincident with the brown stripes, scarcely distinguishable from the striæ; apex subacute, with nearly one and a half smooth whorls; spire much elongated, with the outlines moderately curvilinear; whorls about six and a half, moderately convex, with a well-impressed suture; aperture long, ovate, quite narrow and acute above; columella a little twisted, scarcely truncate. Length 0·33, breadth 0·09 inch. (*Adams.*)

Achatina perplexa, *Adams, Contrib. to Conch.* n. 5. p. 84.
Pfr. Mon. Suppl. 492.

Hab. Jamaica.

77. Oleacina vicina.

"Perhaps a variety of *O. Phillipsii*; but the shell is furnished with numerous longitudinal striæ, never brown-banded; the infra-sutural line is more remote from the suture; the spire is shorter." Div. 22°: spire lon. 0·3: total lon. 0·54, lat. 0·175 mill.

Achatina vicina, *Adams in Bost. Proc.* 1845, p. 14.
Pfr. Mon. Helic. ii. 265.

Hab. Jamaica.

78. Oleacina curvilabris.

Shell oblong-turreted, rather solid, very closely costulate, diaphanous, shining, luteous-horny, remotely white-striped; spire turreted; suture marginate; whorls eight, nearly level, the last less than three-sevenths the length, impressed midway in front; columella vertical, abruptly truncated at the base of the aperture;

aperture narrow, oblong; peristome white-bordered, dextral margin curved forwards. Lon. 16, lat. 5; ap. lon. $6\frac{3}{4}$, lat. $2\frac{4}{5}$ mill.

Achatina curvilabris (Glandina), *Pfr. in Proc. Zool. Soc.* 1845, p. 137; *Mon. Helic.* ii. 258.
Reeve, Conch. Icon. t. 18. f. 94.

Hab. Jamaica.

79. Oleacina tenera.

Shell elongate, somewhat conic, horn-coloured, with numerous well-impressed regular transverse striæ; apex subacute; spire with the outlines a little convex; whorls seven and a half, scarcely convex, somewhat shouldered above, with a well-impressed suture; aperture ovate, acute above; labrum thin, slightly advanced in the upper half, retreating below; columella moderately curved, distinctly truncated. Length 0·3, breadth 0·075 inch. (*Adams.*)

Achatina tenera, *Adams, Contrib. to Conch.* n. 7. p. 104.
Pfr. Mon. Suppl. 497.

Hab. Jamaica.

80. Oleacina solitaria.

Shell elongate, ovate-conic, pale brown, with dark brown transverse lines, about three on each whorl, wanting on the two or three first whorls; with excessively minute crowded transverse striæ; spire with the outlines a little convex; apex rather small; whorls eight, moderately convex, slightly shouldered, with a rather deep suture; last whorl subplanulate, long; labrum thin, sharp, a little produced in the middle; columella well-produced and turning a little to the left. Length 0·52, breadth 0·15 inch. (*Adams.*)

Achatina solitaria, *Adams, Contr. to Conch.* n. 9. p. 168.
Pfr. Mon. Suppl. 497.

Hab. New Hope, Westmoreland, Jamaica.

81. Oleacina costulosa.

Shell conic, turreted, translucent, very pale brownish horn-coloured, darker at the varices, with the surface apparently striated, but having on each whorl about seventy small approximate regular transverse ribs; but the nuclear whorls are smooth; with rather indistinct varices, of which there are two or three on each whorl; apex rather obtuse; spire with the outlines nearly rectilinear, except near the apex; whorls nearly nine, moderately

convex, with a well-impressed suture; aperture broadly ovate; labrum not advanced along the middle, much reflected in the lower half; columella moderately produced, nearly straight, well-truncated. Length 0·86, breadth 0·27 inch. (*Adams.*)

Achatina costulosa, *Adams, Contr. to Conch.* n. 7. p. 102.
Pfr. Mon. Suppl. 499.

Hab. Jamaica.

82. Oleacina arcuata.

Shell fusiform-turreted, rather thin, shining, with close and slightly arched ribs, amber-yellow, adorned with narrow, remote, arched, pale margined red stripes; spire subulate, acute; suture crenulate; whorls nine, level, the last less than one-third the length; columella nearly straight, slightly truncated; aperture oblong; peristome simple. Lon. 13, lat. $3\frac{1}{2}$; ap. lon. $4\frac{1}{3}$, lat. 2 mill.

Achatina arcuata (Glandina), *Pfr. in Proc. Zool. Soc.* 1845, p. 138; *Mon. Helic.* ii. 261.
Reeve, Conch. Icon. t. 17. f. 83.

Hab. Jamaica.

83. Oleacina Dunkeri.

Shell turreted, rather thin, smooth, pellucid, shining, fulvous; spire elongate, with the apex blunt; suture impressed, bordered, obsoletely crenulated; whorls nine, scarcely convex, the last forming less than one-third of the total length; columella arched, truncated highly and almost vertically; aperture semiovate, somewhat triangular; peristome simple, with the right margin arcuately produced in the middle. Length 28, breadth $7\frac{1}{2}$ mill. (*Pfr.*)

Achatina Dunkeri, *Pfr. in Proc. Zool. Soc.* 1850, p. ; *Ic.* n. 76. *Bul.* t. 37. f. 25, 26; *Mon. Suppl.* 500.

β. Larger, chestnut-coloured, paler at the lower part. Length 38, breadth 8 mill.—*Pfr. Ic. Bul.* t. 43. f. 5, 6.

Hab. Haiti (*Sallé*).

84. Oleacina semitarum.

Shell subulate, apex obtuse, pale horny, longitudinally substriate, shining; whorls ten, somewhat flattened, the last scarcely exceeding one-fourth the length; columella strongly arched, obliquely truncated at the base of the aperture; aperture oblong-

acuminate, wide at the base; peristome simple, dextral margin rather arched in front. Lon. 28, lat. 6½; ap. lon. 7, lat. 4 mill.

Helix semitarum, *Rang in Mus. Paris.*
Achatina semitarum, *Jay, Catal.*
Pfr. Symb. ii. 59; *Mon. Helic.* ii. 263; *Ic.* n. 59. *Bul.* t. 28. f. 10, 11 (*Zeitschr. f. Mal.* 1852, p. 110).
Reeve, Conch. Icon. t. 16. f. 73.
Achatina octona, *Turt. Man.* f. 72?
Gray, Man. 18. t. 6. f. 72?

Hab. Antilles.

Compare *Bul. terebraster*, Lam.

85. Oleacina Gossei.

Shell subulate, thin, diaphanous, waxy, remotely ribbed, very finely striated between the ribs on the lower whorls, becoming obsolete downwards; whorls nine to ten, slightly convex, the last scarcely exceeding one-fourth the length; columella oblique, reaching the base of the aperture, slightly truncated; aperture narrow, oblong; peristome simple, dextral margin dilated downwards. Lon. 12, lat. 2⅔; ap. lon. 3⅓, lat. 1⅓ mill.

Achatina Gossei, *Pfr. in Proc. Zool. Soc.* 1845, p. 138; *Mon. Helic.* ii. 267.
Reeve, Conch. Icon. t. 20. f. 114.

Hab. Jamaica.

86. Oleacina pellucens.

Shell subulate, thin, rather closely sculptured with minute ribs, translucent, pale brownish; spire elongate, with the apex rather blunt; whorls seven, flat, the last forming less than one-third of the total length; columella almost rectilinear, very narrowly truncated; aperture ovate-angular; peristome simple, with the lower part of its right margin retreating. Length 6½, breadth 1¾ mill. (*Pfr.*)

Achatina pellucens, *Adams in Proc. Bost. Soc.* 1845, p. 13.
Pfr. Mon. Helic. ii. 295.

Hab. Jamaica.

87. Oleacina lævis.

Shell much elongated, conic, very pale brown, shining, very thin, smooth, with microscopic transverse striæ, which are quite numerous on the upper whorls; spire with rectilinear outlines; apex not very small; whorls seven, a little convex, with a mode-

rately impressed suture; aperture ovate, acute above; labrum thin and sharp; columella slightly arcuate. Length 0·42, breadth 0·1 inch. (*Adams.*)

Achatina lævis, *Adams, Contrib. to Conch.* n. 2. p. 26.
Pfr. Mon. Suppl. 502.

Hab. Jamaica.

This may be only a variety of *O. pellucens*; but that shell has more numerous striæ (*Adams*).

88. Oleacina longispira.

Shell much elongated, conoidal, pale brown, shining, with very lightly impressed, not very numerous transverse striæ; apex obtuse; outlines of the spire slightly curvilinear; whorls ten, moderately convex, with a well-impressed suture; aperture subrhomboidal, subacute above; labrum thin, slightly advanced in the upper half, retreating below; columella very oblique, distinctly truncated. Length 0·45, breadth 0·09 inch. (*Adams.*)

Achatina longispira, *Adams, Contrib. to Conch.* n. 7. p. 104.
Pfr. Mon. Suppl. 503.

Hab. Jamaica.

89. Oleacina gracilior.

Shell conoidal, but very slender, pale horn-coloured, with about twelve transverse oblique slightly prominent lamelloid ridges, which are more distinct next below the suture; apex rather acute; spire with the outlines nearly rectilinear; whorls eleven, a little convex, with a distinct suture; aperture ovate, very acute above, retreating below on both sides, but less on the left side; labrum thin; columella moderately arcuated and truncated. Length 0·55, breadth 0·09 inch. (*Adams.*)

Achatina gracilior, *Adams, Contrib. to Conch.* n. 7. p. 104.
Pfr. Mon. Suppl. 503.

Hab. Jamaica.

90. Oleacina osculans.

Shell conoidal, but very slender, dull horn-coloured, with about fourteen transverse oblique rather prominent lamelloid ridges, which are somewhat arcuated with the convexity forwards; apex rather obtuse; spire with the outlines rectilinear, except near the apex; whorls nine, flattened or concave along the middle, with a well-impressed suture; aperture ovate, very narrow and

acute above, retreating much below on both sides; columella subspiral, distinctly truncated in a young shell, indistinctly so in an old one, with the edge somewhat dilated, so as to resemble a Spiraxis. Length 0·35, breadth 0·06 inch. (*Adams.*)

Achatina osculans, *Adams, Contrib. to Conch.* no. 7. p. 104.
Pfr. Mon. Suppl. 503.

Hab. Jamaica.

**** European and African.*

91. Oleacina cerea.

Shell oblong-turreted, thin, minutely and regularly striated, shining, pellucid, pale wax-coloured; spire rectilinear, with the apex blunt; suture moderate, minutely crenulated; whorls eight, scarcely convex, the last forming a little more than one-fourth of the total length, slightly angulated below the middle; columella curved, abruptly truncated; aperture oblique, oblong; peristome simple, straight, with the right margin slightly arcuate. Length 14, breadth $4\frac{2}{3}$ mill. (*Pfr.*)

Achatina cerea, *Pfr. in Proc. Zool. Soc.* 1852, p. ; *Ic.* n. 67. *Bul.* t. 37. f. 5–7; *Mon. Suppl.* 501.

Hab. Fernando Po (*Fraser*).

92. Oleacina oryza.

Differs from *O. triticea*, Lowe, by the aperture being longer than the spire, by the plait on the body of the penult whorl wanting or very indistinct, and the columellar plait absolutely wanting (*Lowe*).

Helix triticea β. edentula, *Lowe, Prim.* 61. t. 6. f. 26.
Achatina oryza (Fusillus), *Lowe in Ann. & Mag.* 2nd ser. ix. 120. n. 45; *Synops. Diagn.* 10.
Pfr. Mon. Suppl. 509.

Hab. Porto Sancto.

93. Oleacina terebella.

Shell ovate-oblong, rather solid, smooth, whitish horn-coloured; spire regularly conic, rather blunt; suture linear; whorls five to six, the upper ones flat, the penultimate moderately convex, the last forming three-fifths of the total length, descending anteriorly, rounded in front; columella broad, callous, truncated broadly and obliquely; aperture perpendicular, acuminately

semiovate; peristome simple, blunt, with the right margin arcuately dilated forwards. Length 11, breadth 4½ mill. (*Pfr.*)

Achatina terebella (Fusillus), *Lowe in Ann. & Mag.* 2nd ser. ix. 120. n. 47; *Synops. Diagn.* 11.
Pfr. Ic. n. 111. *Bul.* t. 44. f. 9, 10; *Mon. Suppl.* 510.

Hab. Porto Sancto (*Wollaston, Armitage*).

94. Oleacina melampoides.

Shell ovate, somewhat fusiform, thin, very smooth, shining, pellucid, pale amber-coloured; spire short, conic, blunt; suture very slight, bordered with an impressed line; whorls nearly six, flat, the last forming about five-sevenths of the total length, attenuated in front; columella arched and twisted, obliquely truncated, whitish; aperture perpendicular, narrow, irregularly semiovate; peristome simple, sharp. Length 8⅔, breadth 3½ mill. (*Pfr.*)

Helix melampoides, *Lowe, Prim. Faun. Mad.* 60. t. 6. f. 24.
Achatina melampoides, *Reeve, Conch. Icon.* n. 122. t. 22.
Pfr. Ic. n. 34. *Bul.* t. 25. f. 31, 32; *Mon. Suppl.* 510.
Achatina tornatellina, var.?, *Pfr. Mon.* ii. 277.

Hab. Madeira.

95. Oleacina procerula.

Shell fusiformly elongate, rather solid, faintly striated, shining, fulvous; spire elongate-conic, rather blunt; suture slightly bordered; whorls six, rather flat, the last longer than the spire; columella callous, white, narrowly truncated; aperture middle; peristome blunt; right margin scarcely arched. Length 13, breadth 4 mill. (*Mor.*)

Glandina procerula, *Morelet in Journ. Conch.* 1851, iv. 357. t. 9. f. 12; 1852, pp. 35, 274.
Achatina procerula, *Pfr. Mon. Suppl.* 511.

Hab. La Calle, Algiers.

Intermediate between *Gl. folliculus* and *Gl. subulata*, Pfr.

96. Oleacina folliculus. B.M.

Shell oblong, rather solid, smooth, subpellucid, horny-lutescent; spire elongate-conic, rather acute; suture linear, marked with an opake line; whorls six to seven, nearly level, the last less than two-fifths the length, slightly attenuated at the base; columella nearly straight, subvertical, callous, obsoletely truncated above the base of the elliptic-oval aperture; peristome

straight, margins united by a callus, dextral obtuse, strongly arched in front. Lon. 10, lat. $3\frac{1}{3}$; ap. lon. 4, lat. 2 mill.

Helix folliculus, *Gronov.* fasc. 3. 296. t. 19. f. 15, 16.
Gmel. 3654. n. 199.
Fér. Pr. 373 (Cochlitoma).
Achatina folliculus, *Lam.* xviii. 133; *ed. Desh.* 303.
Mich. Compl. 52. t. 15. f. 44, 45.
Phil. Sicil. i. 141. t. 8. f. 27; ii. 114.
Webb & Berth. Syn. 320?
Cantr. Malac. Méd. 138.
Terv. Moll. Alg. 31.
Rossm. x. 34. f. 656.
Deless. Recueil, t. 28. f. 9.
Pfr. Mon. ii. 283; *Ic.* n. 84. *Bul.* t. 38. f. 14, 15.
Desh. l. c. 170. n. 32. t. 134. f. 28–30.
Glandina folliculus (Cionella), *Alb.* 199.
Morelet, Journ. Conch. 1852, 35.
Achatina nitidissima, *Kryn.*, *Pfr. Mon.* ii. 284. n. 113?
Achatina Risso, *Desh. Enc. Méth.* ii. 12. n. 9.
Achatina follicula, *Pot. & Mich. Gal.* i. 127.
Ferussacia Gronoviana, *Risso, Hist.* iv. 80. n. 180. t. 3. f. 27.
Columna folliculus, *Jan. Catal.* 4.
Cionella folliculus, *Beck, Index*, 79. n. 1.
Pupa splendidula, *Costa* (teste *Scacchi, Catal.* 16).
Polyphemus folliculus, *Villa, Disp. Syst.* 20.
Graells, Catal. de los Moluscos, &c. 7.
Glandina folliculus, *Pfr. Symb.* ii. 135.
Phil. Icon. i. 6. 134. t. 1. f. 13.
Küster, t. 18. f. 16–19.
Bulimus folliculus, *Morelet, Moll. du Port.* 73.
Physa scaturiginum, *Drap.* 56. t. 3. f. 14, 15.
Vediantius cristallinus, *Risso, Hist.* iv. 82. n. 183. t. 3. f. 24.

Hab. S. France; Portugal; Italy; Sicily; N. Africa.

97. Oleacina Leacociana.

Shell rather minute, very like *Bul. Maderensis*, Lowe, in shape and colour, allied to *Ach. folliculus*, from which it differs, besides the size, by being attenuated gradually from a broader base, by its aperture rather narrowed above, by its labrum arcuately prominent above, and by the columella being distinctly truncated and prominent. It differs from *A. gracilis*, Lowe, in being more oblong, not fusiform, by its spire, which is extremely blunt, and by the above-enumerated characters of the aperture, labrum and columella (*Lowe*).

Achatina Leacociana (Cylichnidia), *Lowe in Ann. & Mag. N. H.* 2nd ser. ix. 119; *Synops. Diagn.* 10. n. 43.
Pfr. Mon. Suppl. 511.
Hab. Madeira (*T. S. Leacock*).

98. Oleacina nitidissima.

Shell cylindrical, pellucid, very smooth, very shining, horny-lutescent; aperture oblong; whorls five, the last larger; apex obtuse. Lon. $\frac{1}{4}''$.

Achatina nitidissima, *Forbes in Jard. Ann.* ii. 250, 1838.
Wiegm. Arch. 1839, ii. 223.
Pfr. Mon. Helic. ii. 284.
Glandina nitidissima, *Küster*, t. 18. f. 20, 21.
Morelet, Journ. Conch. iii. 36.
Hab. Algeria.

99. Oleacina algira. B.M.

Shell oblong-acuminate, thin, closely striated, whitish under the deciduous, lutescent epidermis; spire conic, turreted, apex rather acute; suture margined, minutely crenulated; whorls six to seven, rapidly increasing, subplanulate, the last nearly equalling the spire, or a little exceeding it; columella slightly arched, abruptly truncated; aperture pointed-semioval; peristome simple, sharp, margins united by a thin callus, the dextral dilated in the middle in front. Lon. 40, lat. 12; ap. lon. 19, lat. 7 mill.

Bulimus algirus, *Brug. Enc. Méth.* i. 364. n. 110.
Bulimus Poireti, *C. Pfr.* iii. 34. t. 7. f. 3, 4.
Helix Poireti (Cochlicopa), *Fér. Pr.* 158; *Hist.* t. 136. f. 1–5.
Polyphemus striatus, *Montf.* ii. 415.
Polyphemus algirus, *Jan. Cat.* 4.
Achatina algira, *Desh. Expéd. de Morée*, 165.
Lam. ed. Desh. xxviii 308; *in Férussac Hist.* p. 184. n. 49.
Cantr. Malac. Méd. 139.
Pfr. Mon. Helic. ii. 288.
Reeve, Conch. Icon. t. 13. f. 43.
Achatina Boreti (misprint for Poireti), *Gray, Ann. Phil.* new ser. ix. 414.
Achatina Poireti, *Rossm.* ii. 18. f. 123.
Pot. & Mich. Gal. i. 130.
Schmidt, Syst. Verz. 13.
Achatina cornea, *Brumati, Monfalc.* 35. f. 5.
Glandina algira (Cionella), *Alb.* 198.

Glandina Algira, *Beck, Index*, 78. n. 19.
Morelet, Journ. Conch. 1852, p. 38; 1853, p. .
Glandina Poiretii, *Beck, l. c.* n. 20.
Küster, t. 11. f. 1, 2; t. 17. f. 22–24.
Hab. Littoral provinces of Austria; Carniola; Dalmatia; Italy; Zante; Morea; Algeria.

100. Oleacina dilatata.

Shell ovate-conic, rather thin, closely costulate-striate, white under the lutescent epidermis; spire conic, obtuse; suture white-margined, finely crenulate; whorls six to seven, rather level, the last exceeding the spire; columella strongly arched, abruptly truncated; aperture irregularly oval; peristome simple, sharp, margins united by a thin callus. Lon. 36, lat. 14; ap. lon. 20, lat. 9 mill.

Achatina dilatata, *Zgl. Mus.*
Pfr. Mon. Helic. ii. 289.
Achatina Poireti, *Mich. Test. Alg.* 9. t. 1. f. 19.
Achatina algira, *Reeve*, n. 43. t. 13.
Glandina dilatata (Cionella), *Alb.* 198.
Achatina algira β, *Phil. Sicil.* i. 141.
Achatina tumida, *Parr. in sched.*
Cochlicopa algira, *Phil. Sicil.* ii. 115.
Polyphemus dilatatus, *Jan. Catal.* 4.
Polyphemus tumidus, *Villa, Disp. Syst.* 19.
Glandina dilatata, *Beck, Index*, 78. n. 18.
Küster, t. 17. f. 19–21.
Morelet, Journ. Conch. 1852, 38.
Helix rosea, var., *Fér. Hist.* t. 136. f. 6, 7?
Hab. Sicily.

[The teeth of *Achatina acicula*, the type of what I had intended for Section B. of this genus, as described by Mr. Thomson, *Ann. & Mag. N. H.* 1851, iv. 92, appear to be like other *Helicidæ*; they must therefore be retained in that Family.]

Fam. 4. ARIONIDÆ.

Foot dilated; upper surface of the tip truncated and furnished with a transverse lunate or an erect longitudinal gland. Jaw horny, lunate. Teeth numerous, four-sided, in close cross series.

Arionidæ, *Gray, Syn. B. M.* 1840, 1842; *in Turton's Manual*, ed. 2. 101, 104, 1840; *P. Z. Soc.* 1847, 169; *Mrs. Gray, Fig. Moll.* iv. 111.
Arionea, *Herrmannsen, Index*, 81.
Helix, § Pherepora, *Desmoulin, Linn. Soc. Bord.* 1824, iii.

Synopsis of Genera.

A. *Body elongate, attached its whole length to the upper surface of the foot. Mantle shield-like, simple, entirely enclosing a flat, oblong, not spiral, shell. Subcaudal gland lunate, transverse, horizontal.* Arionina.

1. Arion. Back keeled, attenuated behind.

2. Geomalacus. Back convex, rounded behind.

B. *Body more or less spiral, prominent from the middle of the upper part of the foot, and covered with a more or less developed spiral shell, sometimes hidden by the reflexed edge of the mantle. Subcaudal gland linear, perpendicular.*

a. *Body and shell subpeltate, very slightly spiral.*

3. Drusia. Body united to the back of the foot, only separated by a lunate groove behind. Shell quite enclosed, thin, with a small, more solid apex.

4. Girasia. Body united to the back of the foot, only separated by the convex hinder edge. Shell partly exposed, ovate, expanded, with solid apex.

5. Mariælla. Body free and separate from the back of the foot. Shell quite enclosed in a thin mantle.

b. *Body and shell subglobose, distinctly spiral.*

* *Shell quite enclosed in the thin mantle which is produced in front.*

6. Laconia. Shell subglobose; spire of few whorls. Mouth very large.

** *Shell permanently covered by the reflexed thin edge of the mantle, leaving the central portion exposed.*

7. Parmacellus. Shell thin, depressed. Mouth very large.

**** Shell exposed, more or less covered by the thickened or reflexed processes of the edge of the mantle.*

8. Vitrinella. Shell imperforate, very thin ; spire conic. Mantle lobe covering the greater part of the shell.

9. Helicarion. Shell imperforate, very thin, depressed ; spire short, last whorl very large. Mouth very large, lunate or rounded. Mantle lobes small.

10. Nanina. Shell perforated, depressed, smooth below. Mouth lunate. Peristome straight, simple.

11. Stenopus. Shell perforated, conical or depressed, thin, diaphanous, last whorl broadest. Mouth roundish lunate. Peristome acute.

***** Shell exposed. Edge of mantle not reflexed.*

12. Ariophanta. Shell sinistral, umbilicated, thin, diaphanous. Mouth oblique.

13. Zonites. Shell dextral, umbilicated, thin, horn-coloured. Mouth lunate ; lip rather thickened within.

A. *Body elongate, attached its whole length to the upper surface of the foot. Mantle shield-like, simple, entirely enclosing a flat, oblong, not spiral, shell, or only some calcareous granules. Subcaudal gland lunate, horizontal, transverse.* Arionina.

1. ARION.

Elongate, subcylindrical. Tail tapering, with a large mucous pore over the tip. Shield anterior, shagreened. Pulmonary cavity anterior, under the shield ; aperture anterior. Orifice of vent quite contiguous, inferior. Shell ovate, or only some calcareous granules in the cavity of the shield.

Arion, *Férussac, Tab. Syst.* 10. 16. 96 *a*. 96 *c*. 1817, 1821 ; *Hist. Moll.* ii. 53.
Gray, Turton's Manual, 104 ; *P. Z. Soc.* 1847, 169. n. 429.
Fleming, B. A. 256, 1828.
Leach, Brit. Moll. 45.
Limacia, *Hartmann, Neue Alpiner*, 208, 1821.

Shell.—Limacella, *Brard*, not *Blainville.*
Limacellus, *Turton.*

In the Proceedings of the Zoological Society, 1847, p. 169, I by mistake referred *Limacellus*, Blainville, to this genus instead of *Philomycus*.

a. *Shell none, or hemispherical and spongy.*

1. ARION ATER.

Blackish red or whitish, edge of the foot generally marked with darker cross lines.

Limax ater, *Müller, Verm.* 2.
Gmelin, S. N. i. 3099.
Drap. Tabl. 101; *Hist.* 122. t. 9. f. 3, 5.
Sturm, D. Faun. 1. t. .
Nunneley, Trans. Phil. Soc. Leeds, 46. t. 1. f. 1; t. 2. f. 1; t. 3. f. 1, 3; t. 4. f. 1; t. 5. f. 1 (anat.).
Limax rufus, *Razoumowsky, H. N. Jorat.* i. 268.
Drap. Hist. 123. t. 9. f. 6.
Sturm, D. Faun. t. 1.
Brard, Hist. 123. t. 4. f. 19, 20.
Limax succineus, *Müller, Verm.* 7.
Gmelin, S. N. i. 3100.
Limax luteus, *Razoumowsky, H. N. Jorat.* i. 268.
Limax marginellus, *Schrank, F. Boica*, 252.
Limax suffuscus, *Drap.*
Féruss. H. Moll. ii. t. 8 D. f. 1.
Arion empiricorum, *Férussac, Tab. Syst.* 17. 96[z]; *Moll.* ii. 60. t. 1. f. 1, 8; t. 2. f. 1, 2; t. 3. f. 2.
Leach, Brit. Moll. 47. t. 8. f. 1, 2.
Alder, Mag. Zool. & Bot. ii. 106.
Troschel in Wiegm. Arch. 1836, 279. t. 9. f. 1 (tongue).
Arion ater, *Gray, Turton's Manual*, 104, 103. f. 1.

Var. *a*. Black or brown.—*Férussac, l. c.* t. 2. f. 1.
Limax ater, *Lister, Phil. Trans.* ix. 96. t. 16, 1674.

Var. *β*. Black, dorsal keel pale greenish.—*Müller, Verm.*
Limax ater, *β*., *Gmelin, S. N.*

Var. *γ*. Black, edge yellowish or scarlet.—*Müller.*
Limax ater, *γ*., *Gmelin, S. N.* i.
Limax marginellus, *Schrank, F. Boica*, 252.

Var. *δ*. Blackish, edge yellow or scarlet.—*Drap. Hist.* t. 9. f. 5.
Férussac, Hist. t. 2. f. 2.

Var. *ε*. Dull rufous, edge yellowish or scarlet.—*Drap.*

Var. ζ. Rufous.—*Férussac, Hist.* t. 3. f. 2.
Limax subfuscus, *List. Ang. App.* t. 2. f. 1.
Razoumowsky, H. N. Jorat. i. 268.
Drap. Hist. 125. t. 968.
Arion subfuscus, *Férussac, Tab. Syst.* 17. 96 z. t. 9. f. 8 (cop. *Drap.*).
Limax rufus, *Brong. E. M.* t. 84. f. 1.

Var. η. Entirely red.—*Férussac, l. c.* t. 1. f. 1, 2, 5.
Limax ruber, *Drap. Hist.* 123.
Lamk. E. M. t. 463. f. 2.

Var. θ. Yellowish.—*Férussac, l. c.* t. 1. f. 4.
Limax succineus, *Müller, Verm.* 7.
Gmelin, S. N. i. 3100.
Limax luteus, *Razoumowsky, H. N. Jorat.* i. 268.
? Arion subflavus, *Johnston.*

Var. ι. Dull brown, sides yellowish or saffron-coloured.—*Férussac,* t. 1. f. 6, 7.

Var. κ. Greenish, with a yellowish streak on each side.—*Férussac,* t. 1. f. 8. ("young not come to its colour.")

Var. λ. White, edge of the foot yellow or white, without black streaks.
Limax albus, *Müller, Est. om Swampe,* 61; *Verm.* ii. 4.
Walck. Naturf. iv. 136. t. 1. f. 7, cop. *E. M.* t. 84. f. 3.
Arion albus, *Férussac, Tab. Syst.* 17. 96 c; *Hist. Moll.* ii. 64. t. 2. f. 3.
Arion empricorum, var., *Leach, Brit. Moll.* 49.

Subvar. 1. White.
Subvar. 2. White, edge yellow.—*Férussac, Hist. Moll.* t. 2. f. 3.
Subvar. 3. White, edge and nape yellow.
Subvar. 4. White, tentacles black.

Hab. Europe. England: common.

2. Arion melanocephalus.

Yellow, or yellow reticulated with grey; head and tentacles dark; shield irregular, shagreened.

Arion melanocephalus, *Faure-Biguet, Férussac, Tab. Syst.* 18. 96 β.

Hab. Europe; France; Dauphiny.

3. Arion flavus.

Yellow, not spotted; head and tentacles blackish; clypeus granulose.

Limax flavus, *Müller, Verm.* 10.
Arion flavus, *Férussac, Tab. Syst.* 24. 96 [3].
Limax aureus, *Gmelin, S. N.* i. 3102.
Nilsson, Moll. Suec. 5.

Hab. Europe; Denmark and Norway.

4. Arion fuscatus.

Brown; clypeus with a dark streak on each side and rufous on the edge; sides of body greenish; edge of foot whitish, with small transverse black lines.

Arion fuscatus, *Férussac, Tab. Syst.* 18. 96 [a]; *Hist. Moll.* ii. 66. t. 2. f. 7.
Blainv. D. S. N. xxvi. 429.

Hab. Europe; Paris (*Férussac*).

5. Arion aterrimus.

Black; sides and under surface of the foot black (in spirits); back with very large elongate rugosities.

Hab. South Africa.

As large as *Arion ater*.

6. Arion sulcatus.

Black brown; edge of the foot chestnut, dark-streaked; shield granulose; body deeply grooved; aperture of respiration subanterior.

Arion sulcatus, *Morelet, Moll. Portugal*, t. 1.

Hab. Portugal, Douro (*Morelet*).

7. Arion fuligineus.

Sooty; edge of foot narrow, reddish, dark-rayed, yellowish in front; shield gibbose, vermiculated; body rugulose, blunt behind; aperture of respiration subanterior.

Arion fuligineus, *Morelet, Moll. Portugal*, 30. t. 2. f. 1.

Hab. Portugal, Douro (*Morelet*).

8. Arion tumidus.

Blackish brown; edge of the foot yellow, dark-rayed, with a subcentral longitudinal chestnut streak; shield small, vermicu-

lated; body cylindrical, end conic, obtuse, deeply sulcated; head and tentacles short; aperture of respiration subanterior; foot iron-grey, with a broad livid zone; mucus white.

Var. 2. Bronze-green, head and tentacles darker.

Arion tumidus, *Morelet, Moll. Portugal*, t. 2. f. 2.

Hab. Portugal.

. The tentacles show the eyes when they are only half-expanded.

b. *Shell distinct, oval, concave, rarely wanting.*

9. Arion hortensis.

Black or bluish, with small grey longitudinal bands; edge of the foot orange.

Limax subfuscus, *Pfeiffer, Syst. Anord.* 20.
Limax fasciatus, *Nilsson, Moll. Suec.* 3.
Limax circumscriptus, *Johnston, Edinb. Phil. Journ.* 1828, v. 77.
Arion hortensis, *Férussac, Tab. Syst.* 18; *Hist. Moll.* ii. 65. t. 2. f. 4, 6.
Gray, Med. Repos. 1821.
Alder, Mag. Z. & B. iii. 105.
Stimpson, Shell New Engl.

Shell.—Limacella variegata, *Turton, Man.* ed. 1. 25. t. 3. f. 16.
Limacella concava, *Brard, Hist.* 121.

Var. 1. Grey, uniform, with black bands.—*Férussac*, t. 2. f. 6.

Var. 2. Reddish grey; edge red with black bands.
Limax alpicola, *Férussac, Hist.* t. 8 *a*. f. 2, 3, 4.

Hab. Europe; Paris (*Férussac*). N. America, Massachusetts (*Stimpson*). β. Alps.

—— ? New genus? or monstrosity?

Form like *Arion*; back cylindrical, hinder end rounded. Foot broad, not margined or sharply defined; shield small; aperture of respiration rather anterior; subcaudal gland terminal. "Le plan locomoteur ne lie pas antérieurement avec la tête de l'animal, mais offre une solution de continuité qui forme une espèce de sac où elle s'engage dans la contraction."

Shell none, only some irregular callous concretions. Back brown, with two paler lateral streaks; foot orange, like *Testacella*.

Hab. Portugal, River Alvega (*Morelet, Moll. Portugal*, 50)

2. GEOMALACUS.

Body rather depressed, shield granular; back rounded, convex, not keeled. Subcaudal gland lunate, horizontal. Respiratory aperture rather in front of the middle of the lower edge of the mantle. Foot divided into three equal longitudinal bands. Teeth square, close, like *Helix*.

Shell none.

Geomalacus, *Allman, Athenæum*, 1843, 851; *Proc. Brit. Assoc. Cork*, 1843; *Ann. & Mag. N. H.* 1845, xvii. 297.
Gray, Proc. Zool. Soc. 1847; *Mrs. Gray's Moll.* iv. 112.
Philippi, Handb. Conch. 239.

1. GEOMALACUS MACULATUS. B.M.

Intense black, beneath pale brownish white; back and shields with numerous minute subequal yellow spots, generally more numerous on a line on each side of the body.

Geomalacus maculatus, *Allman, Ann. & Mag. N. H.* 1846, 297. t.
Mrs. Gray, Fig. Moll. t. 280. f. 1.

Hab. Ireland. Rocks in damp weather at Glouin Caragh, south of Dingle Bay, Co. Kerry. Discovered in 1842 by W. Andrews, Esq.

The subcaudal gland is small, and scarcely to be distinguished in specimens in spirits. These animals are difficult to keep alive in confinement.

B. *Body more or less spiral, prominent from the middle of the upper part of the foot, and covered with a more or less developed spiral shell, sometimes hidden by the reflexed edge of the mantle. Subcaudal gland linear, perpendicular.*

Helix, § Pherepora, *Desmoulin*, 1824.

a. *Body and shell subpeltate, very slightly spiral.*

3. DRUSIA.

Mantle subpeltate, on the middle of the back; under side of the body confounded with the upper surface of the foot, and only separated from it by a transverse arched posterior groove. Aperture of respiration on the middle of the right side of the mantle. Foot high, keeled behind: back of the neck with three grooves, the central double, the lateral one bent down to the side of the

head behind the lower tentacles. Aperture of generation at the back of the right tentacle. "Teeth regular, numerous."

Shell oblong, depressed, expanded, thin; mouth very large; apex subspiral, thick, solid.

Parmacella, sp., *Webb & Van Beneden, Mag. Zool.*
Gray, Fig. Moll. iv., *in Mrs. Gray's Fig. Moll.* t. 282. f. 2.

Messrs. Webb and Van Beneden do not mention the caudal gland in their description, but it is very visible in Morelet's figure and the one figured by Férussac.

1. Drusia Valenciennii.

Shell depressed, oblong, spathulate, concentrically striated; apex pale green, thick, smooth, of half a whorl.

Parmacella Valenciennii, *Webb & Van Beneden, Mag. Zool.*
Gray, Fig. Moll. iv. & iii. t. 282. f. 2.
Morelet, Moll. Portugal, 40. t. 4, from life.

Hab. Portugal, in the Hippurite hills of Alcantara (*Webb*).

Herbivorous, living chiefly on *Cochlearia acaulis*, breeding in April.

"The shell is of an oblong spatulate shape, marked with striæ of growth; it is very thin and extremely fragile, olive outside and pearly within. Its base terminates in an extremely smooth demi-spire of a clear green colour. On one of the sides of the spire, between it and the margin of the plate of the shell, there is a kind of small raised hook to which a protuberance of the skin corresponds on the back of the animal; this protuberance, when seized between the hook and the margin of the shell, serves to fix this latter in its place; so that if not attended to, it is apt to be broken off, in attempting to raise it. This circumstance does not exist in the *Cryptella* of the Canaries, and we know not if it be found in other species of the genus *Parmacella*. An appendage of the skin enters also the demi-spire, of which it assumes the form."—*Webb.*

"Jaws like a horse's hoof."—*Morelet.*

"Mr. Webb's figure from the animal preserved in spirits is detestable: the form, the development of the jaws, the contraction of the tentacles, give an entirely false idea of the animal."—*Morelet*, 44.

"Ce coquille proprement dite, qui fait saillée au point où le tortillon se sépare du plan locomoteur, est entièrement recouverte par la membrane fine et blanchâtre qui tapisse la crypte intermédiaire. Elle engaine l'extrémité de l'animal, qui se termine comme celle des *Helices*.

"Le teste qui lui est adhérent n'est fixé au manteau que par une couche très-fine de tissue cellulaire, qui s'en détache pour s'implanter sur le cord antérieur. Le mucus est blanc argenté." —*Morelet*, 48.

2. Drusia perlucidus.

Body oval, depressed, nearly perlucid, white, marked with black dots. Tentacles very small, with a black streak. Mantle oval. Shell ovate, horny, with an indication of a whorl at the top.—*Quoy*.

Limax perlucidus, *Quoy & Gaim. Voy. Astrol. Moll.* ii. 146. t. 13. f. 10–13.

Hab. Isle of France.

Length 1½ inch. The opening of the generative organs is behind the base of the right tentacle.

"Intermediate between *Limax* and *Parmacellus*," Quoy. Though Quoy and Gaimard have not mentioned the subcaudal gland, I have ventured to place it in this family with doubt.

3. Drusia infumatus.

Shell.—Limax (Arion) infumatus, *Férussac, Hist. Moll.* ii. 96 *. t. 8 F. f. 1, 3.

Parmacella (infumata), *Gray, Fig. Moll.* iv. 113. t. . f. .

Hab. ——?

Only known from Férussac's figure. Deshayes observes, but perhaps only from the figure, that the mantle shows no external appearance of a *shell*.

4. Drusia? Deshayesii.

Parmacella, n. s. from Ouran, *Morelet, Moll. Port.* 45, not described.

Parmacella Deshayesii, *Moquin-Tandon, Act. Soc. Linn. Bord.* xv. 261. t. 1. f. 6; *Journ. Conch.* 1851, p. 145.

Hab. Ouran.

Very like *P. Valenciennii*, and may be a variety of it, but is larger, browner, uniformly coloured, and emits a nauseous odour. Jaw a thin crescent.—*Morelet*.

5. Drusia Gervaisii.

Shell claw-like, very thin, whitish; apex subspiral, rather thickened, polished, yellow or greenish coloured.—*Moquin*.

Animal olive-brown, spotless. Nocturnal. Mucus very shining. —*Faisse*.

Parmacella Gervaisii, *Moquin-Tandon, Journ. Institut*, 1847, n. 730; *Mém. Acad. Montpel.* 1847; *Journ. Conch.* 1851, p. 145.

Parmacella ——, *Dupuy, Moll. France*, iii. *Index*, n. 220, 1849.

Hab. South of France, on the arid plains of Crau and Les Coutures (*Faisse*).

6. Drusia? Alexandrinus.

Rufous; back behind the shield keeled. Shell oblong, ear-shaped, covered with the skin, with a vestige of a posterior spire. Body subcylindrical and blunt in front, acute behind, with the tip recurved behind the mantle, triangular, keeled. Mantle oblong, short behind the middle of the body. Colour pale reddish translucent, variegated with the blackish intestines; soft part of the mantle and hinder part of the back deep rufous; front of body very finely rugulose, hinder part with oblique, transverse, nearly parallel lines. Tentacles four, two upper elongate-eyed. Respiratory aperture under the middle of the shell in the hinder part of the right side of the mantle. Head with a curved line on each side from the mantle to the lower tentacle, and two contiguous lines on the middle of the back to the forehead. Opening of the generative organs near the base of the right tentacle.

Parmacella Alexandrina. *Ehrenb. Sym. Phys.* 1828.
Moquin-Tandon, Mém. Acad. Toulouse, 1850; *Journ. Conch.* 1851, p. 145.
Morelet, Moll. Port. 43.

Hab. N. Africa; Alexandria. (*Ehrenb.*)

The figures from the living animal promised have not yet been published, no part of the work having appeared for many years.

7. Drusia? Rangianus.

"Shell destroyed."

Arion Rangianus, *Férussac, Bull. Sci. Nat.* 1827, x. 300.

Hab. Isle of France.

Allied to *Arion extraneus*, but not described.

8. Drusia? mauritius.

Parmacella mauritius, *Férussac, Bull. Sci. Nat.* 1827, x. 300.

Hab. Isle of France (*Rang*).

"Mr. Rang sent Férussac a drawing and a specimen of the shell and animal. It is allied to *P. Palliolum* of the Brazils, but is very distinct from it and its congeners." Not further described.

These five species may not belong to this genus; but the partial exposure of the shell is not mentioned, and therefore I suspect it is closed, more especially as they are compared with *Drusia Valenciennii*.

See also "*Parmacella Olivieri*," *Eichwald, Fauna Caspio-Caucasica*, t. . f. , copied *Mrs. Gray's Fig. Moll.* t. 282. f. 1: from the Caucasus.

4. GIRASIA.

Body united to the back of the foot, only separated by the convex hinder edge. Shell partly exposed, ovate, expanded, with a solid apex. Back of the neck under the collar with three grooves, the central groove between the tentacles double-edged, the lateral one single, bent down on each side to the sides of the head at the back of the lower tentacles; the head is only partly retractile, so that the base of the upper tentacles, which are completely retracted, are exposed on the top of the head like two perforations. The aperture of the generative organs is rather behind the base of the right tentacle. The hinder part of the body attached to the back of the foot nearly to its hinder end, which is separated from the deep concavity on the back of the foot by a deep lunate cross groove. In all these particulars, the animal exactly agrees with the Portuguese species of *Drusia*.

1. GIRASIA HOOKERI. B.M.

Shell oblong, elongate, slender, arched concentrically, very thin, horny, wrinkled; thicker, but equally horny, in the upper part of the centre; the apex thick, white, solid, suboblong, elongate ear-shaped, with a lateral submarginal spire of half a whorl.

Hab. India, Khasya (*Dr. Joseph Hooker*).

2. GIRASIA? RUTELLUM.

Animal bright gamboge-yellow, with four tentacles; posterior portion of the body behind the shell keeled; shield strengthened internally with a shovel-shaped shell of a pearly or nacreous appearance, obtuse and globose at the apex, with a deep sinus, covered with a thin transparent epidermis, transversely wrinkled by the lines of growth; colour white. Length $\frac{1}{2}$, breadth about $\frac{1}{4}$ of an inch.

Parmacellus rutellum, *Hutton, Journ. Asiat. Soc. Bengal*, 1849, p. 649; *Arch. Naturg.* 1852, p. 289.

Hab. Afghanistan; Candahar. In April crepuscular.

Perhaps the same as the former, but the shell does not agree, and the description does not mention the aperture in the mantle, &c.

3. GIRASIA EXTRANEA.

"Shell a thin horny pellicle, without any appearance of a spire. Mantle with a circular opening showing the brownish pellicle. Foot truncated behind, with a subcaudal pore the whole height of the truncation, with a very strong keel above to the back of the shield. The body encased in a nick in the back." —*Férussac.*

Limax (Arion) extraneus, *Férussac, Hist. Moll.* ii. 96. 2. t. 8 F. f. 5, 7; *Bull. Sci. Nat.* 1827, x. 300.
Parmacella (extranea), *Gray, Fig. Moll.* iv. 113. t. . f. .
Hab. ——?

"We have not found in these two species (*Arion Rangii* and *A. extraneus*), contracted in spirits, the orifice of the organs of generation."—*Fér. Bull. Sci. Nat.* x. 300.

M. Deshayes, in his description of Férussac's figure, appears to have overlooked this authentic description of the animal.

4. GIRASIA? PROBLEMATICA.

Mantle much-produced, forming a collar in front. Body convex and raised behind. Foot small, short.

"Shell yellow, convex externally, concave internally, like a half egg-shell."—*Desh.* from Férussac's figure.

Limax (Arion) problematicus, *Férussac, Hist. Moll.* ii. 93[3]. t. 8 F. f. 13–18 (16, 17 a shell?).
Parmacella (problematica), *Gray, Fig. Moll.* t. . f. .
Hab. ——?

5. MARIÆLLA.

Mantle or body convex, produced like a fleshy collar in front, swollen behind, and separated from the upper part of the foot, in a cavity of which it lies; fringed on the side. Foot compressed, truncated, and with an elongate perpendicular gland behind.

Shell quite hidden by the mantle, half ovate, solid, with a thin, horny, more or less expanded edge.

"Clypeidella, *Valenc. MSS.*" B.M., not Clypidella, *Swainson.*

1. Mariælla Dussumieri. B.M.

Foot produced behind, keeled, truncated with a double edge. Mantle shield-like, free in front, convex, and separated behind by a distinct groove from the front part of the back of the foot; smooth above, with three slight keels on the hinder part, the central one the longest and most distinct. Back without the least appearance of a hole. Back of the neck with three grooves, central double, lateral diverging to the hinder part of the side of the head.

Shell completely hidden, half ovate, elongate, solid, white, with a thin narrow corneous margin; apex subterminal on the right hinder edge, internally horny, only slightly concave.

"Clypeidella Dussumieri, *Valenc. MSS.*," *French collection purchased in London.*

Hab. Mahi, near Seychelles (*M. Dussumier*).

b. *Body and shell subglobose, distinctly spiral.*

* *Shell entirely and permanently covered with the mantle.*

6. LACONIA.

Shell subglobose, entirely and permanently covered with a thin expansion of the mantle. Spire of few whorls, last very large. Aperture very large, lunate. Mantle edged, produced in front, forming a broad collar.

1. Laconia Ferussaci.

Vitrina, sp.? *Desh. in Férussac Hist. Moll.* t. 8 F. f. 10, 11. *Gray, Fig. Moll.* i. 286. f. 3.

Hab. Unknown.

Only known by Férussac's figure.

** *Shell permanently covered by the thin reflexed edge of the mantle, leaving the central portion more or less exposed.*

7. PARMACELLUS.

Shell subglobose, spiral, partly and permanently covered by the mantle; the front of the mantle rather produced, forming a small fleshy collar; the hinder part rather convex.

Parmacelle (Parmacellus), *Cuv. Ann. Mus.* v. (1804) 435; *Mém. Moll.* n. xii.; *Règ. Anim.* ii. 403. ed. 2.
Philippi, Handb. Conch. 240.
Parmacella (§ B.), *Blainv. Man. Malac.* 463.
Parmacella, *Gray, Proc. Zool. Soc.* 1847, 170. n. 441.
Montfort, Conch. Syst.

Férussac distinctly says, "Point de pore muqueux terminal," which induced me to place this genus in *Limacina* (*Proc. Zool. Soc.* 1847, 170); but he refers to *Peltella* and not to *Parmacella Olivieri*.

1. Parmacellus Olivieri.

Parmacella Olivieri (Parmacelle d'Olivier), *Cuvier, Ann. Mus.* v. 435. t. 29. f. 12, 15; *Mém. Moll.* xii. t. ; cop. *Lamk. E. M.* 463. t. 3 *a*, *b*.
Blainv. Man. Malac. 463. t. 41. f. 3.
Parmacellus Olivieri, *Féruss. Tab. Syst.* 25. 96 ϵ; *Hist. Moll.* ii. 79. t. 7. f. 2, 5.
Parmacella Mesopotamiæ, *Oken, Lehrb. Naturg.* 307. t. 9. f.— (from *Cuvier*).

Hab. Mesopotamia.

It appears that Olivier only found a single specimen, which was described and dissected by Cuvier. Férussac says that neither the shell nor the animal is now to be found in the Paris Museum (*Hist. Moll.* ii.), so that the species must remain in doubt until specimens are brought from Mesopotamia.

In the figure the hinder part of the foot is large and high, which separates it from the following; the figure also shows a distinct spiral tip to the body.

M. Morelet is inclined to regard the *Testacella ambigua* of Sowerby as the shell of *Parmacella Olivieri*; but this shell shows no indication of the spiral apex to the body which is represented in Cuvier's figures. (See *Moll. Port.* 42; *Journ. Conch.* iii.)

2. Parmacellus gracilis. B.M.

Foot slender behind, upper part keeled. Shell large, ear-shaped, convex. Spire very obscure (injured) (very thin), white, rather pearly and striated within, covered with a thick, hard, olive, polished periostraca produced beyond the edge of the thin, white, calcareous part.

"Parmacella Olivieri," *French collection purchased in London.*

Hab. ——?

Body convex, rounded, quite free nearly to the respiratory aperture, and lying on a flat place on the back of the foot, with a keeled edge on the margin of the hinder part. Back of the neck with three grooves, the central one double, the lateral bent down to the hinder part of the side of the head. Orifice of generation at the hinder base of the right tentacle. Respiratory aperture in the middle of the mantle shield; mantle with a large central hole, exposing part of the shell. Foot slender, compressed, keeled at the upper edge, truncated behind; subcaudal gland distinct, perpendicular. Teeth numerous, in very close crowded cross lines, compressed, with a flat ridge ending in two teeth.

3. PARMACELLUS PUNCTATUS.—*Van Hasselt, Bull. Sci. Nat.* 1824, iii. 82.

Hab. Java.

4. PARMACELLUS TÆNIATUS. — *Van Hasselt, Bull. Sci. Nat.* 1824, iii. 82.

Hab. Java.

5. PARMACELLUS RETICULATUS. — *Van Hasselt, Bull. Sci. Nat.* 1824, iii. 82.

Hab. Java; higher regions.

These three species are not described. M. Van Hasselt observes, that they all have a slit in the envelope which covers the shell: this slit is usually closed, but the animal can at will open it so widely as almost entirely to expose the shell.

**** Shell exposed, more or less covered by the thickened edge of the collar of the mantle, or by fleshy processes of the mantle which are expanded over it.*

8. VITRINELLA.

Shell imperforate and very slightly perforated; spire conic; whorls rapidly enlarging, last large, rounded or keeled. Peristome simple, not reflexed.

Animal: the hinder part of the mantle produced and more or less covering the hinder part of the penultimate whorl. Foot truncated behind, subcaudal gland linear.

Vitrina, sp., *Quoy & Gaimard, Voy. Astrol.* ii. 136.
Nanina, sp., *Beck, Index*; *Pfeiffer, Monog.*

1. Vitrinella flammulata.

Shell depressedly globose, perforated, pellucid, fragile, smooth, fulvous, zoned with red flamelets; aperture semi-lunate, sinistral margin not inflected; whorls three and a half, slightly convex. Lat. maj. 6, min. 5, alt. 3½ lin.

Animal: back of the mantle produced and covering the hinder part of the penultimate whorl.—*Voy. Astrol.* t. 2. f. 3, 7; *Gray, Fig. Moll.* t. 71. f. 3.

Helix flammulata, *Quoy & Gaim. Astrol. Zool.* ii. 136. t. 11. f. 5–7.
Pfr. Mon. Helic. i. 61.
Vitrina flammulata, *Lam. ed. Desh.* vii. 730. n. 6.
Nanina flammulata, *Gray, Fig. Moll.* iv. 111.
Pfr. Symb. ii. 63.
Hab. Celebes.

2. Vitrinella viridis.

Shell solid, discoidal, strongly keeled, convex above, globose beneath, green; zoned with a yellow band; whorls four and a half, nearly plane; aperture ample, triangular; peristome simple, acute; umbilical fissure scarcely distinct. Lat. 9, alt. 6 lin.

Animal: mantle produced behind, covering the hinder part of the penultimate whorl.—*Voy. Astrol.* t. 2. f. 16; *Gray, Fig. Moll.* t. 71. f. 1.

Vitrina viridis, *Quoy & Gaim. Astrol.* ii. 138. t. 11. f. 16–18.
Lam. ed. Desh. vii. 730, n. 7.
Nanina viridis, *Beck, Ind.* 4.
Gray, Fig. Moll. iv. 111.
Helix viridis, *Pfr. Mon. Helic.* i. 82.
Hab. Celebes.

3. Vitrinella ——.

Vitrina couverte, *Eydoux, Voy.*
Nanina ——, *Gray, Fig. Moll.* iv. 111. t. 288. f. 3.
Not described.

9. HELICARION.

Animal large; neck elongate; mantle edge with some small lobes reflexed over the shell.

Shell imperforate, very thin, depressed; spire short; last whorl very large; mouth large, lunate or rounded; pillar edge rather inflexed.

Helixarion, *Ferussac, Prod.* 1819.
Helicarion, *Férussac, Tab. Syst.* 23, 24, 1821.
Gray, Proc. Zool. Soc. 1847, 169. n. 431.
Helicolimax (*β.* Helicarion), *Blainv. Man. Malac.* 462 & 654.
Vitrina, sp., *Pfeiffer, Monogr.* ii. 492.

Australasian.

1. Helicarion Cuvieri.

Shell heliciform, subglobose, depressed, sharply striated, greenish-brown; whorls?, the last very ample, rounded; aperture rounded, lunar, inner side simple?; columella scarcely spiral. Length $5\frac{1}{2}$, breadth $4\frac{1}{4}$, axis $3\frac{1}{4}$ lin.

Helicarion Cuvieri, *Fér. Pr.* 20; *Hist.* t. 9. f. 8; t. 9 A. f. 1, 2.
Blainv. Dict. Sc. Nat. xx. 482.
Beck, Ind. p. 2. n. 1.
Vitrina Cuvieri, *Gray, Ann. Phil.* 1825, ix. 408.
Sow. Gen. n. 11?
Reeve, Conch. Syst. ii. t. 162. f. 2?
Pfr. Mon. Helic. ii. 507.
Desh. l. c. 96. 21. n. 10.
Vitrina Australasiæ, *Blainv.*?

Hab. Australia?

2. Helicarion Freycineti.

Shell depressed, rather thin, smooth, shining, opake, pale fulvous; spire scarcely convex; suture linear; whorls 3, rapidly increasing, the highest nearly level, the last depressed, rounded, rather wider at the base; aperture scarcely oblique, transversely lunar-oblong; peristome simple, narrowly membranous, margined all round, upper margin scarcely dilated in front; columellar margin not receding, slightly arched. Lat. maj. 19, min. 14, alt. 8 mill.

Helixarion Freycineti, *Fér. Pr.* ii. 20; *Hist.* t. 9 A. f. 3, 4; t. 9 B. f. 2.
Blainv. Dict. Sc. Nat. xx. 482.
Helicarion Freycineti, *Fér. in Voy. de Freyc. Zool.* p. 465. t. 67. f. 1.
Beck, Ind. p. 2. n. 2.
Vitrina Freycineti, *Gray, Ann. Phil.* 1825, ix. 408.
Pfr. Mon. Helic. ii. 508.
Desh. l. c. 96. 22. n. 11.
Vitrina Cuvieri, *Sow. Gen.* 11. f. 2 (*Beck*).
Helicolimax Australasiæ, *Blainv. Dict. Sc. Nat.* xxxii. 255.
Helix (Vitrina) Helicarion, *Voigt in Cuv. Thierr.* iii. 76.

Hab. Port Jackson, Australia.

3. Helicarion nigra.

Shell oval, nearly plane, rufous; aperture elliptical, ample, left margin slightly inflected; whorls four, the last very large. Lat. 6, alt. $2\frac{1}{2}$ lin.

Animal black, large, neck elongate, contractile into the shell.—*Quoy.*

Vitrina nigra, *Quoy & Gaim. Astrol.* ii. 135. t. 11. f. 8, 9.
Lam. ed Desh. vii. 730. n. 5.
Pfr. Mon. Helic. ii. 509.

Hab. Port Western, Australia.

Australasian: *animal not known. Perhaps* Vitrinæ.

4. Helicarion Strangei.

Shell depressed, very thin, smooth, shining, brownish or greenish horn-coloured; spire small, scarcely convex, with a minute, lateral apex; suture impressed, slightly bordered; whorls three, scarcely convex, enlarging rapidly, the last depressed above, rounded at the periphery, more convex beneath; aperture oblique, large, lunate, nearly circular; peristome simple, rather blunt; with the margins approaching each other; right margin dilated forwards, columellar margin receding, strongly arched, with a very narrow membranaceous edge. Height 5, greatest breadth 10, least breadth $7\frac{1}{2}$ mill. (*Pfr.*)

Vitrina Strangei, *Pfr. in Proc. Z. S.* 1849, 132; *Mon. Suppl.* 5; *Ic.* t. 2. f. 9–12.

Hab. Brisbane, East coast of Australia (*Strange*).

This shell resembles much the figure of *V. nigra*, Quoy, but it may be easily distinguished by the number of its whorls and by the receding columellar margin.

5. Helicarion Milligani.

Shell depressed ovate, rather solid, polished, very shining, of an olivaceous blackish colour; spire convex; whorls three, enlarging rapidly, the penultimate one convex, the last depressedly rounded, rather broad beneath; aperture very oblique, lunately ovate, of the same colour within; peristome simple, a little inflected; right margin dilated forwards, columellar margin slightly arched. Height $10\frac{1}{2}$, greatest breadth $22\frac{1}{2}$, least breadth 16 mill. (*Pfr.*)

Vitrina Milligani, *Pfr. in Proc. Z. S.* 1851, p. ; *Mon. Suppl.* p. 4.

Hab. A small island in Macquarie Harbour, Van Diemen's Land (*Milligan*).

This curious shell is very like young specimens of *H. Busbyi*, Gray, but imperforate.

6. Helicarion Verreauxii.

Shell depressed, slightly striated, thin, diaphanous, little shining, of an olivaceous-fulvid colour; spire nearly flattened; suture impressed, bordered; whorls three and a half, enlarging rapidly, the last depressed, narrow and rather flat beneath; aperture very oblique, large, lunarly ovate; peristome simple, sharp, with the margins approximated to each other, right margin curved forwards, columellar margin shortly receding, slightly arched. Height 6, greatest breadth 13, least breadth 6 mill. (*Pfr.*)

Vitrina Verreauxii, *Pfr. in Proc. Zool. Soc.* 1849, p. 132; *Mon. Suppl.* p. 5.

Hab. Australia (*Verreaux*).

7. Helicarion castanea.

Shell depressed, with the periphery ovate, slightly striated, very polished, chestnut-coloured; spire flat; whorls three, scarcely convex, the last large, with a broad membranaceous edge beneath; aperture a little oblique, lunate-oval; peristome with a yellow stripe behind its membranaceous margin. Height 5, greatest breadth 9, least breadth 7 mill. (*Pfr.*)

Vitrina castanea, *Pfr. in Proc. Zool. Soc.* 1851, p. ; *Mon. Suppl.* p. 5; *Ic.* t. 6. f. 1–4.

Hab. Australia.

8. Helicarion robusta.

Shell helicoid, transverse, depressed-globose, rather strong, polished, very bright, pale yellowish-green, striated with regular, obtuse lines of growth; spire obtuse; whorls three, the last large; apex subcentral; rounded beneath; aperture rounded, left margin reflected above, forming a small umbilical fissure. Breadth ½, axis ¼ poll.

Vitrina robusta, *Gould, Proc. Bost. Soc.* 1846, 181; *Exped. Shells*, 1851, 10. f. 11.
Pfr. Mon. Helic. ii. 508.

Hab. East coast of Australia.

Polynesian: *animal unknown*. *Perhaps* Vitrinæ.

9. Helicarion Keppelli.

Shell depressed, with the periphery oblong, thin, slightly and arcuately striated, principally near the suture, highly polished,

pellucid, greenish white; spire flat, with the apex subtle, but scarcely prominent; suture impressed, indistinctly bordered; whorls scarcely three, enlarging rapidly, the last convex and narrow beneath; aperture large, oblique, ovate; peristome simple, straight; right margin dilated forwards, columellar margin strongly arched, with a slight membranaceous edge. Height 6, greatest breadth 14, least breadth 10 mill. (*Pfr.*)

Vitrina Keppelli, *Pfr. in Z. f. M.* 1853, 51; *Mon. Suppl.* 622; *Ic.* t. 6. f. 8–10.

Hab. New Caledonia (*Capt. Keppel*).

10. Helicarion zebra.

Shell rounded, umbilicated, depressed-convex above, more convex beneath, hyaline, ornamented with obliquely wavy flamelets of white and chestnut colour; whorls four, thinly striated above; aperture rather dilated; umbilicus very small. Breadth 7, axis 5 mill.

Vitrina zebra, *Le Guill. in Revue Zool.* 1842, 136.
Pfr. Mon. Helic. ii. 509.

Hab. Auckland Islands.

11. Helicarion tenella.

Shell small, amber-like, subperforate, conspicuously striated with lines of growth; spire rounded, apex subcentral; whorls three, convex, declining; suture channelled; aperture nearly circular; lip arched in front. Breadth $\frac{1}{5}$, axis $\frac{1}{11}$ poll.

Vitrina tenella, *Gould, Proc. Bost. Soc.* 1846, 181; *Exped. Shells*, 1851, 11. f. 10.
Pfr. Mon. Helic. ii. 509.

Hab. Sandwich Islands.

12. Helicarion caperata.

Shell helicoid, depressed-globose, obtusely angled at the circumference, thin, subopake, furrowed with conspicuous lines of growth and oblique, branching wrinkles, especially above, pale fulvous-horny, perforation covered; spire of three and a half convex whorls, rapidly increasing; suture deep; apex subcentral; aperture nearly circular; lip simple, bent over the umbilicus; columella simulating a callus, passing into the second spire. Lat. max. $\frac{6}{20}$, alt. $\frac{1}{5}$ poll.

Vitrina caperata, *Gould, Proc. Bost. Soc.* 1846, 181; *Exped. Shells*, 1851, 10. f. 9.
Pfr. Mon. Helic. ii. 509.

Hab. Sandwich Islands.

13. Helicarion planospira.

Shell ovate, thin, slightly striated, pellucid, shining, greenish horn-coloured; spire small, flat; suture scarcely impressed; whorls three, enlarging very rapidly, the last depressed above, more convex and narrow beneath, with a slight membranaceous edge; aperture large, very oblique, lunate-roundish, somewhat pearly within; peristome thin: right margin arcuately dilated forwards and slightly expanded, columellar margin strongly arched. Height 7, greatest breadth 13, least breadth 10 mill. (*Pfr.*)

Vitrina planospira, *Pfr. in Z. f. M.* 1853, 51; *Mon. Suppl.* 623; *Ic.* t. 6. f. 14–16.

Hab. Salomon's Islands.

14. Helicarion dimidiata.

Shell much-depressed, with the periphery ovate, very thin, sculptured with minute arcuate striæ, silky shining, pale horn-coloured; spire nearly flat; whorls two and a quarter, which are open beneath, with a very narrow membranaceous edge; aperture horizontal, as large as the whole shell; peristome simple, with regularly curved margins. Height $1\frac{1}{3}$, greatest breadth $5\frac{1}{2}$, least breadth 4 mill. (*Pfr.*)

Vitrina dimidiata, *Pfr. in Proc. Z. S.* 1851; *Mon. Suppl.* 6.

Hab. New Zealand (*Strange*).

15. Helicarion Salomonia.

Shell globose-conic, extremely thin, sculptured with crowded oblique folds, pellucid, shining, brownish-olivaceous; spire conic, rather blunt; suture impressed; whorls four, convex, the last forming about three-fifths of the total length; aperture oblique, ovate; peristome simple, straight, with regularly arched margins. Length 11, breadth 9 mill. (*Pfr.*)

Vitrina Salomonia, *Pfr. in Z. f. M.* 1853, 51; *Mon. Suppl.* 623; *Ic.* t. 6. f. 17–19.

Hab. Salomon's Islands.

Asiatic.

16. Helicarion irradians. B.M.

Shell depressed, with the periphery ear-shaped, thin, with crowded, arcuate, radiating impressed lines, obsoletely decussated with irregular spiral striæ, diaphanous, scarcely shining, of a cinnamon horn-colour above; spire small, raised into a slight papilla; suture impressed, bordered; whorls nearly four, rather

flat, enlarging rapidly, the last depressed, more convex beneath; aperture very oblique, lunate, nearly circular; peristome simple, thin, with the columellar margin regularly arched. Height 8½, greatest breadth 18½, least breadth 14 mill. (*Pfr.*)

Animal brown.—*B.M.*

Vitrina irradians, *Pfr. in Proc. Zool. Soc.* 1851; *Mon. Suppl.* p. 3.

Hab. Ceylon.

Asiatic: *animal unknown. Perhaps* Vitrinæ.

17. Helicarion Ceylanica.

Not described.

Vitrina Ceylanica, *Beck, Index*, 2. n. 12; *Mus. R. C.* viii. t. 1. f. 3. *Pfr. Mon.* ii. 503; *Ic.* t. 6. f. 34–38.

Hab. Ceylon.

18. Helicarion papillata.

Shell depressed, thin, nearly smooth, bright, pellucid, pale flesh-coloured; spire nearly level, papillated in the middle; suture deeply impressed, margined; whorls three and a half, slightly convex, striatulate near the suture, the last depressed, sometimes sculptured with obsolete spiral lines, periphery rounded, base rather wide; aperture very oblique, ample, rounded-lunar, wider than high; peristome thin, upper margin dilated above, columellar receding, much-arched. Lat. maj. 10, min. 8, alt. 5 mill.

Vitrina papillata, *Pfr. in Proc. Zool. Soc.* 1848; *Mon. Helic.* ii. 502.

Hab. Luzon, Philippines.

19. Helicarion planulata.

Shell much-depressed, subdiscoidal, nearly smooth, bright, flesh-coloured; spire nearly level; suture impressed; whorls three, very slightly convex, very rapidly increasing, the last depressed, narrow at the base; aperture very ample, very oblique, lunar, transversely dilated; peristome thin, upper margin dilated in front, columellar far receding, arched. Lat. maj. 11, min. 8, alt. 4½ mill.

Vitrina planulata, *Pfr. in Proc. Zool. Soc.* 1848; *Mon. Helic.* ii. 502.

Vitrina depressa, *Beck, MSS.*, not *Jeffr.*

Hab. Luzon, Philippines.

20. Helicarion aperta.

Shell much depressed, slightly convex above, wide open at the base, smooth, subopake, greenish-white; spire minute, lateral; suture smooth; whorls two and a half, slightly convex, very narrow at the base, wide open, the last very large, smoothly vaulted; aperture horizontal, ear-shaped, open to the apex; peristome quite simple. Lat. maj. 11, min. 8, alt. 3 mill.

Vitrina aperta, *Beck, MSS.*
Pfr. in Proc. Zool. Soc. 1848; *Mon. Helic.* ii. 502.
Hab. Luzon, Philippines.

9*. Platycoster, only known from the following short account, is probably one of the *Vitrinæ* of Pfeiffer. "It approaches the genera *Helix* and *Vitrina*, but a difference in the shell induces me to separate it."—*Hasselt.*

Platycoster, *Hasselt, Bull. Sci. Nat.* iii. 82, 1824; *Proc. Zool. Soc.* 1847, 169.
Philippi, Handb. Conch. 481.
Helicopsis, sp., *Beck, Index*, 1837.

1. Platycoster corneus.

Platycoster corneus, var., *Hasselt, Bull. Sci. Nat.* iii. 82, 1824.
Hab. Java.

10. NANINA.

Shell perforated, depressed, polished, smooth above and below. Mouth lunate or lunate elliptical; peristome the thickness of the shell, straight; columellar lip short, reflexed, very often covering the perforation. Mantle edge thick, prominent, with a more or less large lobe on each side; the left expanded on the lower part of the whorls. Foot narrow, truncated behind, with a short conical process above the truncation; gland linear, erect.

Vitrina, sp., *Quoy & Gaim.*
Blainv. Man. Malac. 654.
Nanina (citrina), *Gray, Proc. Zool. Soc.* 1834, ii. 58; 1847.
Macrochlamys (vitrinoides), *Benson, MSS. Journ. Asiat. Soc. Beng.* 1832, j. 13, not described.
Tanychlamys (vitrinoides), *Benson, MSS. Journ. Asiat. Soc. Beng.* 1834.
Stenopus, part., *Gray, Proc. Zool. Soc.* 1847, 169.
Helicopsis, *Beck, Ind.*
Microcystis, *Beck, Ind.*
Naninia, *Sow. Conch. Man.* 198. 1842, misprint.

Nanina (*retrorsa*) has very many teeth in a slightly doubly curved line; the central tooth is simple; the central lateral teeth have a broad double base; the more external ones (the change is gradual) have a narrow double base, each of the lobes being bifid:—see *Troschel, Wiegm. Arch.* xv. (1849) 236. t. 4. f. 6. The upper jaw is simple, arched, entire.

Dr. Albers divides this genus into four, with the following characters:—

1. *Xesta*. Shell smooth, polished—*N. citrina*.
2. *Microcystis*. Shell smallish, very smooth; mouth broad, subvertical—*N. orbis*.
3. *Hemiplecta*. Shell above granular or decussate striated, beneath polished, last whorl more or less keeled—*N. bulla*.
4. *Ryssota*. Shell above rugose-striate, beneath polished, last whorl depressed, dilated in front—*N. Sowerbyana*.

a. *Continental India.*

1. NANINA NANA.

Shell rather small, convex-conoidal, pale brownish; whorls six to seven, closely convoluted, the last rounded; aperture rather wide; lip simple; umbilicus evanescent; apex very obtuse. Lat. 0·1 poll.

Helix nana, *Hutton, Journ. As. Soc.* vii. 218. pt. 1.
Pfr. Mon. Helic. i. 31.

Hab. Simla, Himalaya.

2. NANINA CACUMINIFERA.

Shell with a covered umbilicus, conic, trochiform, horn-coloured; spire attenuated towards the blunt, nipple-shaped apex; whorls eight, slowly increasing, flattened above and marked with seven spiral, minutely granulate lines, with more minute similar intermediate ones; last whorl acutely compressed and keeled, convex, polished and with radiating striæ beneath; aperture securiform; peristome sharp, with the lip scarcely dilated and reflected above. Height 10, greatest breadth 19, least breadth 16 mill.

Helix cacuminifera, *Benson, in Ann. and Mag. Nat. Hist.* 1850, arch, 214.
Reeve, n. 744. t. 124.
Pfr. Mon. Suppl. 36.

Hab. Neilgherries (*Jerdon*).

3. Nanina fastigiata.

Shell imperforate, elevate-conic, very thin, nearly smooth, little shining, pellucid, whitish horn-coloured; spire conic; apex rather pointed; suture impressed, bordered; whorls seven, moderately convex, the last acutely keeled, not descending anteriorly, rather flat beneath and impressed in the centre; aperture nearly perpendicular, depressed, somewhat quadrangular; peristome simple, straight, with the margins almost parallel; columellar margin short, callous. Height $4\frac{1}{3}$, breadth 4 mill. (*Pfr.*)

Helix fastigiata, *Hutton, Journ. As. Soc.* vii. 217. pt. 1.
Wiegm. Arch. 1839, ii. 222.
Pfr. Mon. i. 37. n. 57; *Ic.* n. 919. t. 141. f. 15, 16; *Mon. Suppl.* 40.
Reeve, n. 823. t. 133.

Hab. Simla, Himalaya.

4. Nanina vesicula.

Shell perforate, conoidal-depressed, thin, nearly smooth, shining, translucent, pale horn-coloured; spire short, conoidal, with the apex acuminate; suture deep; whorls six, the last one rounded, not descending, convex beneath; aperture nearly perpendicular, lunate-rounded, of equal height and breadth; peristome simple, sharp, with the columellar margin perpendicular, reflected into a short, triangular lamina near the perforation. Height $7\frac{1}{2}$, greatest breadth 15, least breadth 13 mill. (*Pfr.*)

Nanina vesicula, *Benson, Journ. As. Soc.* vii. 216.
Albers, 59 (Xesta).
Helix vesicula, *Pfr. Mon.* i. 48. n. 88; *Ic.* n. 820. t. 129. f. 21, 22; *Mon. Suppl.* 47.

Hab. Himalaya Mountains.

5. Nanina orcula.

Shell scarcely perforate, conic-globular, thin, with irregular rib-like striæ, rough, horn-coloured, translucent; spire obtusely conic; suture deep; whorls three and a half, rounded, the last imperceptibly descending; aperture very oblique, lunate-roundish; peristome simple, straight, with the margins somewhat convergent; columellar margin a little reflected, half covering the perforation. Height $1\frac{3}{4}$, breadth 2 mill. (*Pfr.*)

Helix orcula, *Benson, Ann. and Mag. N. H.* 2nd ser. vi. 251.
Pfr. Ic. n. 882. t. 136. f. 18–20; *Mon. Suppl.* 42.

Hab. Bengal and Bahar, India.

6. Nanina Bimaensis.

Shell subperforate, obtusely conoidal, obliquely striate, quite milk-white; spire elevated, with the apex blunt, polished; whorls six and a half, flattened, not shining, as it were dusty above, flattened, shining beneath; aperture roundish-trapeziform; peristome simple, sharp; columellar margin reflected at its insertion, almost covering the perforation. Height 31, greatest breadth 32, least breadth 29 mill. (*M.*)

Nanina Bimaensis, *Mousson, Fav. Moll.* 111. t. 21. f. 1.
Alb. 60 (Hemiplecta).
Helix Bimaensis, *Pfr. Mon. Suppl.* 45.
Hab. Island of Bimah (*Zollinger*).

7. Nanina rareguttata.

Shell subperforate, orbicularly conoidal, striated, nearly smooth, yellow, conspersed with scarcely elongated oily spots; whorls five and a half, enlarging rapidly, moderately convex, the last somewhat inflated, declivous above, convex beneath, uniform or with a single brownish band; spire short, with the apex diaphanous; aperture large, obliquely roundish-lunate, flesh-coloured within; peristome simple, straight; columellar margin sharp, reflected at its insertion. Height 26, greatest breadth 32, least breadth 26·5 mill. (*M.*)

Helix rareguttata, *Mousson, Fav. Moll.* 112. t. 21. f. 3.
Reeve, n. 492. t. 91.
Pfr. Mon. Suppl. 45.
Hab. Island of Bimah.

8. Nanina trochus.

Shell imperforate, trochiform, conic, white, with a broad red band, apex obtuse. Lat. 10 lin.

Helix trochus, *Müll. Verm.* ii. 79. n. 275.
Chemn. ed. 2. *Helix*, n. 127. t. 21. f. 13, 14.
Pfr. Mon. Helic. i. 46.
Trochus hortensis, *Chemn*, ix. pt. 2. 52. t. 122. f. 1055, 1056.
Nanina trochus, *Beck, Ind.* 4.
Hab. East Indies?

9. Nanina Zecythis.

Shell scarcely perforate, conoidal-depressed, thin, nearly smooth, shining, translucent, pale reddish horn-coloured, variegated with paler spots; spire short, conoidal, rather acuminate;

suture moderate; whorls six, very little convex, the last one broader, not descending, rather flattened beneath; aperture nearly perpendicular, broadly lunate, its breadth surpassing its height; peristome simple, sharp, with the columellar margin arcuate, somewhat declivous, very shortly reflected above. Height 7, greatest breadth 13, least breadth 10½ mill. (*Pfr.*)

Helix Zecythis, *Benson in Ann. & Mag. N. H.* 1852, May, 406. *Pfr. Ic.* n. 936. t. 143. f. 12–14; *Mon. Suppl.* 47.

β. Larger, with the spire more raised and seven whorls. Height 9, breadth 15 mill. (*Pfr. Ic.* t. 143. f. 15.)

Hab. Rajmahal Hills, India (*Bacon*).

10. Nanina subjecta.

Shell perforate, conoidally depressed, thin, striated, oily-shining, diaphanous, horn-coloured; spire shortly conoidal, rather pointed; suture slight, whitish; whorls six and a half, very little convex, the last broad, somewhat depressed, not descending, little convex beneath; aperture not very oblique, roundish-lunate, broader than high; peristome simple, straight, columellar margin slightly receding, arched, very shortly reflected above. Height 9, greatest breadth 17, least breadth 14 mill. (*Pfr.*)

Helix spreta, *Benson MSS.* olim, not *Adams.*
Helix subjecta, *Benson in Ann. & Mag. N. H.* 1852, May, 407. *Pfr. Ic.* 935. t. 143. f. 9–11; *Mon. Suppl.* 48.

Hab. Rajmahal Hills, India.

11. Nanina nuda.

Shell scarcely perforate, conoidally depressed, thin, faintly striated, pellucid, pale fulvid horn-coloured; spire conoidal, rather acute; suture impressed, slightly bordered with white; whorls six, moderately convex, the last larger, inflated, not descending; aperture almost diagonal, roundish-lunate, broader than high; peristome simple, straight, with the margins somewhat convergent; right margin arcuately dilated forwards, columellar margin slightly receding, arched, dilated and reflexed above. Height 7, greatest breadth 11, least breadth 9¾ mill. (*Pfr.*)

Helix nuda, *Pfr. in Proc. Zool. Soc.* 1852, p. ; *Ic.* n. 1102. t. 161. f. 16, 17; *Mon. Suppl.* 48.
Reeve, n. 781. t. 129.

Hab. Himalaya Mountains (*Fortune*).

12. NANINA GLAUCA. B.M.

Shell subperforate, orbiculate-conoidal, quite glabrous, bright, bluish-hyaline; spire elevated, rather acute; whorls six and a half, slightly convex, the last much wider, rounded; aperture subvertical, lunar; peristome simple, straight; columellar margin scarcely dilated, nearly closing the perforation. Lat. maj. 12½, min. 11, alt. 7¾ mill.

Nanina glauca, *Benson* (teste *Busch*).
Helix glauca, *Bens. Pfr. Symb.* iii. 65.
Phil. Icon. iii. 17, *Helix*, t. 10. f. 8.
Chemn. ed. 2, *Helix*, n. 539. t. 87. f. 1–3.
Pfr. Mon. Helic. i. 48; *Ic.* ii. 118.
Reeve, n. 771. t. 128.
Nanina (Xesta) glauca, *Alb.* 59.
Hab. Bengal.

13. NANINA FRAGILIS.

Shell thin, fragile, glassy, olivaceous, conic-discoidal; spire slightly exserted, apex obtuse; whorls five, convex above, subplanulate beneath; aperture oblique, rounded-ovate; peristome acute. Lat. 0·35 poll.

Nanina fragilis, *Hutton, Journ. As. Soc.* vii. 216.
Helix fragilis, *Pfr. Mon. Helic.* i. 48.
Bens. in Ann. & Mag. Nat. Hist. 2nd ser. ii. 163.
Hab. Kirmalliah, Himalaya.

14. NANINA BAJADERA.

Shell reversed, globose-conoidal, rather thin, fulvid, with strong longitudinal folds, which are smaller alternately; spire conoidal, with the apex rather blunt, reddish-brown; whorls four, rather convex, the last one inflate, rather sharply keeled in the middle, descending anteriorly, compressed beneath near the umbilicus, which is extremely narrow; aperture large, oblique, lunate-roundish; peristome simple, straight: columellar margin broadly dilated and reflected above. Height 20, greatest breadth 30, least breadth 25 mill. (*Pfr.*)

Helix Bajadera, *Pfr. in Z. f. M.* 1850, 69; *Ic.* n. 860. t. 133. f. 10, 11; *Mon. Suppl.* 52.
Reeve, n. 388. t. 75.
Hab. Bombay (*Benson*).

15. Nanina oblita. B.M.

Shell perforate, rather lenticular, very thin, with crowded arcuate folds above; pellucid, pale horn-coloured; spire depressed-turbinate, rather pointed; whorls six, very little convex, the last not descending anteriorly, surrounded at the periphery with an obtuse, denticulated keel, more convex and with radiating striæ beneath; aperture little oblique, lunate; peristome simple, thin, straight: basal margin slightly arched, shortly reflected near the perforation. Height 11½, greatest breadth 23, least breadth 20 mill. (*Pfr.*)

Helix oblita, *Pfr. in Proc. Zool. Soc.* 1851, p. ; *Mon. Suppl.* 54. *Reeve*, n. 444. t. 83.

Hab. India.

16. Nanina Baconi.

Shell narrowly perforate, depressed turbinate, very thin, pellucid, pale horn-coloured, elegantly decussate by wrinkled striæ and silky shining above, polished beneath with radiating striæ; spire conoidal, with the apex rather pointed, brownish; suture impressed; whorls five, rather convex, slowly increasing, the upper ones bordered above with a reddish-brown narrow band, the last one not descending anteriorly, keeled, convex beneath; aperture nearly perpendicular, lunate, angular; peristome sharp, with the margins convergent; columellar margin perpendicular, forming a rounded angle, with the basal one very shortly reflected above. Height 8½, greatest breadth 14, least breadth 13 mill. (*Pfr.*)

Helix Baconi, *Benson, in Ann. & Mag. Nat. Hist.* 2nd ser. vi. 251. *Pfr. Ic.* n. 917. t. 141. f. 11, 12; *Mon. Suppl.* 55.

Hab. Moradabad, North India (*Bacon*).

17. Nanina Jenynsi.

Shell subperforated, turbinated, striatulate, thin, shining, keeled, milky, with one brown band above the keel; spire short, conical, acute; whorls five and a half, very slightly convex, the last more convex beneath; aperture angularly lunar; peristome simple, acute; columellar margin slightly reflected above, nearly closing the perforation. Lat. maj. 12, min. 11, alt. 7½ mill.

Helix Jenynsi, *Pfr. Proc. Zool. Soc.* 1845, 131; *Mon. Helic.* i. 81; *Ic.* n. 821. t. 129. f. 23, 24.
Phil. Icon. ii. 11. 86. t. 7. f. 8.

Nanina (Xesta) Jenynsi, *Alb.* 59.

Hab. ——?

18. Nanina infula.

Shell subperforate, trochiform, thin, pellucid, whitish horn-coloured, with the upper surface little shining, slightly striate and girdled with elevated, concentric, somewhat distant lines; spire conic, with the apex rather pointed; whorls six, moderately convex, the last one keeled, more shining and nearly smooth beneath; aperture rather oblique, transversely square, lunate; peristome simple, sharp, straight; columellar margin nearly perpendicular, a little dilated and very shortly reflected above. Height 7, greatest breadth 8, least breadth 7½ mill. (*Pfr.*)

Helix infula, *Benson, in Ann. & Mag. N. H.* 2nd ser. ii. 160.
Pfr. Ic. n. 804. t. 127. f. 24, 25; *Mon. Suppl.* 58.
Reeve, n. 783. t. 129.

Helix turbiniformis, *Benson, in Journ. As. Soc.* (olim).

Hab. From the vicinity of the town of Murshedabad, Bengal, and of the Hill of Patharghata in the province of Bahar, India.

19. Nanina Barrakporensis.

Shell subperforate, raised-trochiform, thin, faintly striated, shining, pellucid, brownish horn-coloured; spire conic, rather acuminate; suture deep; whorls six, convex, enlarging gradually, the last keeled, not descending, rather convex beneath; aperture scarcely oblique, depressed, lunate, somewhat angular; peristome simple, thin, straight; columellar margin short, a little reflected near the punctiform perforation. Height 3½, breadth 3½ mill. (*Pfr.*)

Helix Barrakporensis, *Pfr. in Proc. Zool. Soc.* 1851, p. ; *Ic.* n. 969. t. 147. f. 20–22; *Mon. Suppl.* 59.
Reeve, n. 816. t. 132.

Hab. Barrakpore, India (*Bacon*).

20. Nanina semifusca.

Shell orbiculate, depressed, thin, fragile, horny, smooth, slightly angulated at the margin, perforated beneath; aperture ovate semilunar, margins very thin, acute; whorls narrow, slightly convex. Lat. maj. 18, min. 15, alt. 9 mill.

Helix semifusca, *Desh. in Belanger, Voy. Zool.* p. 414. t. 1. f. 8–10.
Pfr. Mon. Helic. i. 54.

Hab. Pondicherry.

21. NANINA STRIATA. B.M.

Shell rather solid, subpellucid, whitish; periostracum thin, olivaceous; spire slightly convex, closely striated transversely; the last whorl nearly smooth in front. Lat. 15, alt. 9 lin.

Nanina striata, *Gray in Proc. Zool. Soc.* 1834, 59.
Müll. Synops. 5.
Helix striata, *Pfr. Mon. Helic.* i. 55.
Hab. ——?

22. NANINA DECUSSATA.

Shell perforate, depressed, thin, nearly smooth, very minutely decussated above under a strong lens, silky shining, pale reddish horn-coloured; spire little raised; apex blunt; suture slight, bordered; whorls six, moderately convex, enlarging gradually, the last not descending, obsoletely angled at its periphery, rather flattened beneath; aperture little oblique, depressed, lunate, somewhat angular; peristome simple, straight, with distant margins; columellar margin scarcely arched, declivous, very shortly reflected above. Height 11, greatest breadth 25, least breadth 21½ mill. (*Pfr.*)

Helix decussata, *Benson, Pfr. Mon.* i. 70. n. 158; *Ic.* n. 922. t. 141. f. 23, 24; *Mon. Suppl.* 62.
Reeve, n. 743. t. 124.
Hab. Bengal.

23. NANINA VITRINOIDES. B.M.

Shell subperforate, depressed, thin, smooth, fragile, pale horny; spire scarcely elevated; suture margined; whorls six, very slightly convex, the last wide, more convex beneath; aperture widely lunar; peristome simple, straight, acute, columellar margin scarcely reflected. Lat. maj. 23, min. 21, alt. 12 mill.
Animal, *Gray, Fig. Moll.* t. 71. f. 5.

Helix vitrinoides, *Desh. in Guér. Mag.* 1831, t. 26; *Encycl. Méth.* ii. 225. n. 51.
Chemn. ed. 2, *Helix*, n. 689. t. 110. f. 10–15.
Pfr. Mon. Helic. i. 56.
Strickland in Proc. Zool. Soc. 1848, p. 142; *Moll.* t. 2. f. 1–3.
Reeve, n. 151. t. 34.
Helix petrosa, *Hutt. Journ. Asiat. Soc.* iii. 83.
Pfr. Mon. i. 56. n. 114 (fide *Benson in Ann. & Mag. N. H.* 2nd ser. ii. 163).
Nanina (Xesta) vitrinoides, *Alb.* 59.

Nanina vitrinoides, *Gray, Proc. Zool. Soc.* 1834, 58; *Fig. Moll.* iv. 111. t. 71. f. 5.
Helicella vitrinoides, *Beck, Ind.* 6.
Vitrina subcentralis, *Beck, MSS.*
Hab. Bombay; Philippines.

24. NANINA RESPLENDENS.

Shell subperforated, depressed, quite glabrous, shining, thin, pellucid, lutescent-horny; spire slightly prominent; whorls six and a half, slightly convex, increasing gradually, the last regularly augmented, slightly convex beneath, deeply impressed in the middle; aperture nearly vertical, depressed, wide, lunar; peristome simple, acute; columellar margin descending very obliquely, basal very slightly reflected in the centre. Lat. maj. 19, min. 16½, alt. 9 mill.

Helix resplendens, *Phil. in Zeitschr. f. Malak.* 1846, 192.
Chemn. ed. 2, *Helix*, n. 688. t. 110. f. 7–9.
Pfr. Mon. Helic. i. 56.
Reeve, n. 430. t. 81.
Nanina resplendens, *Trosch. in Arch. f. Nat.* 1849, i. 234.
Alb. 59 (Xesta).
Helix expolita, *Desh. in Fér.* i. 190. n. 255. t. 87. f. 1.
Hab. Birmah, near Mergui.

25. NANINA MADERASPATANA. B.M.

Shell very narrowly umbilicated, depressedly-globose, striately wrinkled, pale rufous, white-zoned and clouded; whorls five to six, scarcely convex, the last slightly inflated; aperture oblique, lunate-oval; peristome simple, rather thickened at the umbilicus, reflected. Lat. maj. 32, min. 26½, alt. 19 mill.

Helix Maderaspatana, *Gray in Proc. Zool. Soc.* 1834, 67.
Müll. Synops. 9.
Chemn. ed. 2, *Helix*, n. 170. t. 31. f. 7, 8.
Pfr. Mon. Helic. i. 63; *Ic.* i. 203.
Reeve, n. 392. t. 75.
Helix Korékouké (Helicella), *Fér. Pr.* 237 *& illus.*
Desh. l. c. 180. n. 241. t. 102. f. 7–9.
Nanina (Ryssota) Maderaspatana, *Alb.* 61.
Helix pondicheriensis, *Pfr. Symb.* i. 38.
Nanina Korékouké, *Beck, Ind.* 4.
Hab. E. India, Pondicherry, Maderaspatam, &c.

26. NANINA LUBRICA.

Shell perforate, depressed, indistinctly radiatingly striated,

very polished, yellow-fulvid or olivaceous; spire nearly flat, with the apex scarcely prominent, blunt; suture slightly channeled; whorls five, the last rounded, convex beneath; aperture scarcely oblique, broadly lunate; peristome sharp, sometimes with a rather distant whitish internal lip; columellar margin descending obliquely, slightly sinuate, somewhat thickened and slightly reflexed above. Height 11, greatest breadth 24, least breadth 20 mill. (*B.*)

Helix lubrica, *Benson in Ann. & Mag. N. H.* 2nd ser. x. p. .
Reeve, n. . t. .
Pfr. Mon. Suppl. 629.

Hab. Darjiling, Sikkim-Himalaya (*Trotter*).

27. Nanina honesta.

Shell subperforated, orbiculate, smooth, bright, pellucid, horny-whitish; spire depressedly conoidal, slightly papillate; whorls five, very slightly convex, increasing gradually, the last obsoletely angulated at the outline, convex beneath; aperture widely lunar; peristome simple, straight, basal margin smoothly arched, columellar very slightly reflected above. Lat. maj. 13, min. 11½, alt. 7½ mill.

Helix honesta, *Gould, MSS.*
Pfr. Mon. Helic. i. 57.
Reeve, n. 452. t. 84.

Hab. Birmah.

28. Nanina Perrotteti.

Shell perforate, depressed, rather thin, smooth, lucid, horn-coloured; spire scarcely subturbinate, with the apex rather pointed; suture slight, simple; whorls five and a half, scarcely convex, the last one somewhat depressed, not descending, rather flattened beneath; aperture nearly perpendicular, depressed, lunate; peristome simple, straight, scarcely reflected near the open perforation. Height 4, greatest breadth 8, least breadth 7 mill. (*Pfr.*)

Helix Perrotteti, *Pfr. in Z. f. M.* 1851, 13; *Ic.* n. 1088. t. 159. f. 41–44; *Mon. Suppl.* 63.

Hab. The Neilgherries (*Perrottet, Guérin*)?

29. Nanina planiuscula.

Shell rather small, depressed, brown, polished; whorls five, the last rounded at the margin; aperture transverse. Lat. 0·1 poll.

Helix planiuscula, *Hutt. Journ. As. Soc.* vii. pt. 1. p. 218.
Pfr. Mon. Helic. i. 60.
Hab. Simla, Himalaya.

30. NANINA INTERRUPTA. B.M.

Shell sinistral, orbiculate-convex, tumid beneath, umbilicated, obtusely angled at the outline, very closely striated longitudinally, with interrupted bands transversely disposed above the striæ; apex obtuse; peristome thin, acute. Lat. —?

Helix interrupta, *Benson, Proc. Zool. Soc.* 1834, 90.
Müll. Synops. 10.
Bens. Zool. Journ. v. 461.
Pfr. Mon. Helic. i. 63.
Ariophanta interrupta, *Beck, Ind.* 5. n. 4.
Nanina interrupta, *Pfr. Symb.* ii. 63.
Hab. India; Sicrigale.

31. NANINA SOLATA.

Shell perforate, depressed-globose, radiately striated, shining, bluish-white, reddish-brown anteriorly and of a reddish-chestnut colour towards the apex, with very numerous translucent points, with one chestnut-coloured band above the angle of the penult whorl, and one to three obsolete bands beneath; whorls five, moderately convex, the last rather angled, rounded anteriorly; spire blunt; aperture oblique, transversely ovate-lunate; peristome brownish chestnut-coloured within, bordered with white; labrum straight, deflected, with the columellar margin rather reflected, nearly covering the umbilicus. Height 11, greatest breadth 23, least breadth 18 mill. (*B.*)

Helix solata, *Benson in Ann. & Mag. N. H.* 2nd ser. ii. 159.
Pfr. Mon. Suppl. 67.
Reeve, n. 741. t. 24.
Hab. South India; The Neilgherries (*Jerdon*).

32. NANINA THEODORI.

Shell perforated, depressed, thin, subdiaphanous, horny-lutescent, very closely costulated above, decussated with impressed concentric lines, smoother beneath, excentrically striatulated with concentric lines gradually vanishing towards the perforation; spire scarcely elevated, rather obtuse; suture impressed, obsoletely margined with red; whorls six and a half, very slightly convex, gently increasing, the last obsoletely angulated; aperture depressed, lunar; peristome simple, straight, columellar margin

descending very obliquely, very slightly reflected above. Lat. maj. 26, min. 23, alt. 13 mill.

Helix Theodori, *Phil. in Zeitschr. f. Malak.* 1846, 191.
Chemn. ed. 2, *Helix*, n. 687. t. 110. f. 1–3.
Pfr. Mon. Helic. i. 70.
Nanina (Hemiplecta) Theodori, *Alb.* 60.
Hab. E. Indies; Mergui.

33. Nanina bistrialis. B.M.

Shell slightly perforated, globosely depressed, thin, fragile, very finely striated, under a lens decussated with close, obsolete striæ, horny straw-coloured, zoned in the middle with two close red lines; spire scarcely convex; whorls four, nearly level, rapidly increasing; aperture ample, lunar-oval; peristome simple, columellar margin recurved. Lat. maj. 31, min. 25, alt. 15 mill.

Nanina bistrialis, *Beck, Ind.* 2.
Pfr. Symb. ii. 17.
Alb. 59 (Xesta).
Helix bistrialis, *Chemn.* ed. 2, *Helix*, n. 61. t. 11. f. 10, 11.
Pfr. Mon. Helic. i. 71; *Ic.* i. 90.
Desh. 186. n. 249.
Reeve, n. 483. t. 90.
Helix exilis, *Chemn.* ix. pt. 2. 121. t. 129. f. 1149; not *Müll.* (*Helicella*) *Fér. Pr.* 236; *Hist.* t. 92. f. 1.
Helix diaphana, *Lea, Obs.* i. 166. t. 19. f. 65 (not *Lam.*).
Hab. Pondicherry, Tranquebar.

34. Nanina vitellina.

Shell perforate, depressed-globose, scarcely shining, brownish orange-coloured, very minutely decussated above; spire shortly conoidal, rather blunt; whorls five and a half, moderately convex, the last one somewhat descending anteriorly, scarcely striate below its periphery, which sometimes is obsoletely angulated, white round the umbilicus, which is contracted and extremely narrow; aperture oblique, lunate-rounded; peristome simple, with the margins distant, columellar margin white, thickened and reflected, rather dilated above. Height 18, greatest breadth 29, least breadth 24 mill. (*Pfr.*)

Helix vitellina, *Pfr. in Proc. Zool. Soc.* 1848, 109; *Z. f. M.* 1848, 92; *Ic.* ii. 763. t. 122. f. 22, 23; *Mon. Suppl.* 72.
Reeve, n. 390. t. 75.
Hab. Base of the Neilgherries (*Jerdon, Benson*).

35. NANINA LIGULATA. B.M.

Shell perforated, depressedly-globose, longitudinally striated above, minutely decussated, glabrous beneath, white, zoned with a single, rather broad, luteous band, above the outline; whorls five, planulate, the last convex beneath; aperture irregularly lunate-elliptical; peristome simple, dextral margin straight, columellar slightly reflected, forming an obsolete angle with the basal. Lat. maj. 26, min. 23, alt. 17 mill.

Helix ligulata (Helicogena), *Fér. Pr.* 47; *Hist.* t. 31. f. 2.
Pfr. Symb. i. 38; *Mon. Helic.* i. 71; *Ic.* i. 206.
Chemn. ed. 2, *Helix*, n. 174. t. 33. f. 1, 2.
Desh. 180. n. 240.
Reeve, n. 395. t. 76–83.
Helix semisculpta, *Mus. Reg. Berol.* olim.
Nanina ligulata, *Beck, Ind.* 4.
Alb. 59 (Xesta).

Hab. Bengal.

36. NANINA BOMBAYANA.

Shell subglobose, a little depressed, subdiaphanous, bright, pale rosy, very finely striated longitudinally; whorls five, convex; umbilicus rather small; aperture semi-rotund; lip sharp, white outside. Lat. 26, alt. 20 mill.

Helix Bombayana, *Grat. Act. Bord.* ii. 406. t. 1. f. 1.
Pfr. Mon. Helic. i. 41.

Hab. Bombay.

37. NANINA CHASTELLII. B.M.

Shell perforated, depressed, lenticular, keeled, obliquely striated, whitish, variegated diversely with brown spots, white-zoned in the middle; whorls six to six and a half, planulate; aperture rather angularly lunar, brown inside; peristome simple, acute, columellar margin dilated, reflected, not hiding the perforation. Lat. maj. 27, min. 24, alt. 14 mill.

Helix Chastellii (Helicella), *Fér. Hist.* (1832) t. 80. f. 4.
Chemn. ed. 2, *Helix*, n. 445. t. 74. f. 8–10.
Pfr. Mon. Helic. i. 78.
Desh. 106. n. 144.
Pfr. Ic. ii. 53.
Helix Cracherodii, *Gray, Proc. Zool. Soc.* 1834, 67.
Müller, Synops. 9.

Hab. E. Indies? (Mus. Gray.)

38. NANINA ANCEPS.

Shell scarcely perforated, lenticular, pale horny, acutely keeled, striated above, shining beneath; whorls six, very slightly convex, the last more convex beneath, smooth, marked below the compressed, slightly prominent keel with a few impressed concentric lines; aperture angularly lunar; peristome simple, thin, columellar margin very slightly reflected. Lat. maj. 17, min. 16, alt. 9 mill.

Caracolla anceps, *Gould in Bost. Journ.* iv. 4. 454. t. 24. f. 4.
Helix anceps, *Chemn.* ed. 2, *Helix*, n. 551. t. 88. f. 8–10.
Pfr. Mon. Helic. i. 80; *Ic.* ii. 126.
Reeve, n. 155. t. 35.
Helix (Thea) anceps, *Alb.* 118.
Helix serrula, *Benson*?, fide *Mason in Journ. As. Soc.* xvii.

Hab. Tavoy, Birman Empire.

39. NANINA INDICA.

Shell perforated, orbiculate-convex, rather solid, closely costulate-striated above, granulately decussated with close impressed lines, entirely fulvous; whorls five and a half, nearly level, the last more convex beneath, smooth, marked beneath the keel with a few impressed concentric lines; aperture angularly-lunar; peristome straight, white, columellar margin slightly thickened, rather reflected above. Lat. maj. 22, min. 19, alt. 11 mill.

Helix indica, *Pfr. Symb.* iii. 66; *Mon. Helic.* i. 80.
Reeve, n. 448. t. 83.

Hab. E. Indies; Nilagiric Mountains.

40. NANINA ACUDUCTA.

Shell perforate, thin, lenticular, conic, sharply keeled, with riblike striæ above, which are very closely decussated and granulated by impressed lines; spire scarcely raised; apex rather blunt; whorls five, flattened, nearly contabulate, the last ventricose and smooth beneath, marked with numerous impressed spiral lines; keel compressed beneath; aperture lunate, angled, nearly axe-shaped; peristome thin, simple, columellar margin very shortly reflected above. Height 11, greatest breadth 22, least breadth 19 mill. (*Bens.*)

Helix acuducta, *Benson in Ann. & Mag. N. H.* 1850, March, 214.
Reeve, n. 739. t. 124.
Pfr. Mon. Suppl. 78.

Hab. Neilgherries Mountains, South India (*Jerdon*).

41. Nanina Humphreysiana. B.M.

Shell openly perforated, orbiculate-conoidal, convex beneath, rugosely granulated, fulvous-yellow, chestnut-banded at the margin; spire elate, rather acute; whorls six to seven, slightly convex, the last compressed around the perforation; aperture oblique, lunar; peristome simple, acute, columellar margin scarcely reflected. Lat. maj. 53, min. 47, alt. 33 mill.

Helix Humphreysiana, *Lea, Trans. Am. Phil. Soc.* vii. 463. t. 12. f. 16.
Chemn. ed. 2, *Helix*, n. 168. t. 31. f. 3, 4.
Fér. Hist. livr. 34. t. 2. f. 7.
Pfr. Mon. Helic. i. 43; *Ic.* i. 201.
Desh. in Fér. 185. n. 248. t. 89. f. 7.
Reeve, n. 387, t. 74.
Nanina (Hemiplecta) Humphreysiana, *Alb.* 60.
Var. H. gemina, *V. d. Busch, Pfr. Mon.* i. 43. n. 73.
Reeve, n. 374. t. 73.

Hab. Pondicherry; Singapore.

42. Nanina bullula. B.M.

Shell rather small, glabrous, translucent, subtrochiform, conoidal; whorls five, convex, the last rounded; suture impressed; umbilicus narrowed; aperture wider; lip simple. Lat. 0·15 poll.

Helix bullula, *Hutton, Journ. As. Soc.* vii. pt. 1. 218.
Pfr. Mon. Helic. i. 86.
Reeve, n. 819. t. 133.

Hab. Simla, Himalaya.

43. Nanina humilis.

Shell subturbinate, slightly striated, horn-coloured, brownish, diaphanous, oily glistering; spire convexly conoidal, with the apex rather pointed; whorls five, rounded, the last one not descending anteriorly, obsoletely angulated at its periphery; umbilicus broad and deep; aperture very oblique, nearly circular; peristome simple, sharp, straight, with the columellar margin not reflected. Height 2, greatest breadth $3\frac{1}{3}$, least breadth 3 mill. (*Pfr.*)

Helix humilis, *Hutton, Pfr. Mon.* i. 106 n. 267; *Ic.* n. 823. t. 129. f. 28–30; *Mon. Suppl.* 83.
Reeve, n. 825. t. 133.

Hab. Landour, India (*Benson*).

44. NANINA? BELANGERI. B.M.

Shell orbiculate-globose, slightly depressed, translucent, rosy, whitish beneath, umbilicated, decussated above with thin striæ; aperture large, oblique; lip simple. Lat. maj. 46, min. 37, alt. 28 mill.

Helix Belangeri, *Desh. in Bélang. Voy. Zool.* 43. t. 1. f. 1–3.
Lam. ed. Desh. 157. p. 101.
Pfr. Mon. Helic. i. 69; *Encycl. Méth.* ii. 233. n. 69, *& in Fér.* 100. n. 137. t. 69 I. f. 4.
Nanina Belangeri, *Beck, Ind.* 4.

Hab. Pondicherry; Malabar.

45. NANINA LABIATA. B.M.

Shell openly perforated, depressed, thin, striatulate, obsoletely decussated above with concentric lines, beneath smooth, bright, fulvous; spire nearly level; whorls six, subplanulate, the last dilated, depressed; aperture wide, lunar; peristome acute, usually rufescent, callous-lipped internally, upper margin rounded in front, basal evenly subarcuated, columellar very slightly reflected. Lat. maj. 40, min. 35, alt. 20 mill.

Helix labiata, *Pfr. in Proc. Zool. Soc.* 1845, 65; *Mon. Helic.* i. 73; iii. 117. n. 554.
Chemn. ed. 2, *Helix*, n. 182. t. 35. f. 6–8.
Nanina Bensonis, *Hutt. MS.*
Nanina (Hemiplecta) labiata, *Albers, Heliceen*, 61.

Var. Uniform whitish, front side fulvous or white with a single chestnut band.

Hab. Landour, East Indies.

46. NANINA SPLENDENS.

Shell discoidal, purple-brown, polished, faintly striated concentrically and radiately, radiating striæ remote, the others very closely placed; spire scarcely elevated; whorls seven (omitting the apex), closely convoluted; aperture lunate; lip furnished with a distant, internal, thickened ridge. Lat. 0·65 poll.

Nanina splendens, *Hutton, Journ. As. Soc.* vii. pt. 1. 215.
Pfr. Mon. Helic. i. 73.

Hab. Mahassu, Himalaya.

b. *Ceylon.*

47. NANINA SEMIDECUSSATA.

Shell perforate, conoidal, solid, striated, decussated with spiral striæ, which are most distinct above, opake, uniformly reddish-

brown; spire conoidal, rather pointed; whorls seven, very little convex, the last one keeled, not descending, convex, striate beneath, with the spiral lines obsolete; aperture diagonal, lunate, angulate; peristome simple, straight, blunt, with the columellar margin very shortly reflected above. Height 18, greatest breadth 33, least breadth 30 mill. (*Pfr.*)

Helix semidecussata, *Pfr. in Proc. Zool. Soc.* 1851, p. ; *Ic.* n. 955. t. 145. f. 8, 9; *Mon. Suppl.* 53.
Reeve, n. 567. t. 102.

Hab. Island of Ceylon.

This shell is very nearly allied to *H. inversicolor*, Fér., but it differs from it by its being perforate, and the spire more raised.

48. NANINA EMILIANA. B.M.

Shell perforate, conoidally lenticular, rather solid, sculptured above with crowded oblique ribs, rather regularly granulated by impressed spiral lines, opake, yellowish-brown; spire conoidal, with the outlines slightly concave, with the apex raised, rather blunt; whorls six, moderately convex, enlarging slowly, last not descending, compressedly keeled, convex beneath and radiately striate, slightly shining; aperture oblique, angularly lunate; peristome simple, straight, with the columellar margin shortly reflected near the perforation. Height 8, greatest breadth 16½, least breadth 15 mill. (*Pfr.*)

Helix Emiliana, *Pfr. in Proc. Zool. Soc.* 1852, p. ; *Ic.* n. 1075. t. 158. f. 33–35; *Mon. Suppl.* 55.
Reeve, n. 608. t. 108.

Hab. Ceylon.

49. NANINA JULIANA. B.M.

Shell openly perforated, depressedly-turbinated, apex obtuse, solid, ponderous, smooth, striated at the suture, white; whorls five, slightly convex, the last rosy in front, zoned with a red line at the suture, ornamented with a chestnut band at the margin shaded downwards, nearly level beneath, impressed in the middle, umbilical area brown; aperture obliquely lunar; peristome simple, obtuse, basal margin slightly thickened. Lat. maj. 43, min. 36, alt. 23 mill.

Nanina Juliana, *Gray*, *Proc. Zool. Soc.* 1834, 58.
Müller, Synops. 5.
Beck, Ind. 4. n. 11.
Alb. 61 (Ryssota).
Helix rosacea, *Sow. in Beech. Voy.* 143. t. 38. f. 2.
Helix Dufourii, *Grat. in Act. Bord.* xi. 407. t. 1. f. 2.

Helix citrinoides, *Grat. ibid.* 161.
Helix commendabilis, *Fér. Pr.* 235 (*Grat.*).
Helix Juliana, *Chemn.* ed. 2, *Helix*, n. 180. t. 33. f. 15–17.
Pfr. Mon. Helic. i. 44; *Ic.* i. 211.
Fér. Hist. t. 88. f. 1?
Reeve, n. 373. t. 72.

Hab. Ceylon.

50. Nanina Gardeneri. B.M.

Shell subperforated, turbinated, solid, decussated with longitudinal and more distant spiral striæ, bright chestnut; spire elevated, rather acute; whorls six and a half, slightly convex, the last larger, nearly smooth, ornamented at the margins with a white zone; aperture obliquely lunar, white inside; peristome simple, straight, columellar margin slightly thickened, rather dilated above, nearly closing the perforation. Lat. maj. 22, min. 19, alt. 15 mill.

Helix Gardeneri, *Pfr. in Proc. Zool. Soc.* 1847, 229; *Mon. Helic.* i. 47.
Chemn. ed. 2, *Helix*, n. 703. t. 112. f. 12, 13.
Reeve, n. 446. t. 83.

Hab. Ceylon.

51. Nanina Layardi.

Shell perforate, turbinate, rather thin, covered with wrinkled striæ, scarcely shining, pellucid, pale horn-coloured; spire conoidal, with the apex rather pointed; whorls five and a half, moderately convex, the last one keeled, not descending, convex beneath; aperture little oblique, rounded-lunate, scarcely angular; peristome straight, thin, sharp, with the columellar margin very shortly reflected above. Height 9, greatest breadth 13, least breadth not quite 12 mill. (*Pfr.*)

Helix Layardi, *Pfr. in Proc. Zool. Soc.* 1851, p. ; *Ic.* n. 953. t. 145. f. 3, 4; *Mon. Suppl.* 55.
Reeve, n. 614. t. 109.

Hab. Ceylon (*Layard*).

52. Nanina Chenui. B.M.

Shell subperforate, depressed, rather thin, malleately-subdecussated with fine striæ and impressed spiral lines, chestnut-fulvous; spire scarcely elevated, obtuse; whorls four and a half, nearly level, slightly wrinkled-striate at the scarcely impressed suture, the last angulated, not descending, ornamented with a

peripheral band of pale and chestnut, diluted below; aperture rather oblique, truncated-oval, opaline within; peristome straight, nearly simple, columellar margin slightly thickened, slightly dilated-reflected at the closed perforation. Lat. maj. 40, min. 34, alt. 20 mill.

Helix Chenui, *Pfr. in Zeitschr. f. Malak.* 1847, p. 145; *Mon. Helic.* ii. 438.
Chemn. ed. 2, *Helix*, n. 739. t. 119. f. 14–16.
Reeve, n. 370. t. 72.

Hab. Ceylon?

53. Nanina Ceylanica. B.M.

Shell perforate, subglobose-depressed, rather solid, diaphanous, scarcely shining, pale reddish horn-coloured, distinctly decussated and granulated above; whorls four and a half, little convex, the last surrounded in the middle with a white band, which is bordered on both sides, or only beneath, with a reddish-brown line; aperture middle-sized, oblique, roundish-lunate; peristome simple, straight, blunt; columellar margin rather thickened and slightly reflected above. Height 13, greatest breadth 26, least breadth 21 mill. (*Pfr.*)

Helix Ceylanica, *Pfr. in Z. f. M.* 1850, 67; *Ic.* n. 795. t. 127. f. 6, 7; *Mon. Suppl.* 71.
Reeve, n. 411. t. 78.
Helix bistrialis β., *Pfr. Mon.* i. 71.

β. Larger, uniformly fulvid-yellow; height 17, greatest breadth 32½, least breadth 28 mill.

γ. With the white peripherical band wanting, with a chestnut-coloured band in its place, and sometimes several reddish-brown lines.

Hab. Ceylon.

This species differs from *N. bistrialis* in the structure and sculpture of the shell, in the proportion of the whorls and of the aperture, &c.

54. Nanina Woodiana.

Shell depressed, thin, smooth, very shining, brownish horn-coloured; spire little raised, with the apex very minute; suture impressed; whorls six, scarcely convex, increasing slowly, the last one not descending anteriorly, depressed, slightly angulated, rather flat beneath; umbilicus narrow, open; aperture nearly perpendicular, lunate; peristome simple, straight, sharp, with

the columellar margin scarcely reflected. Height 4½, greatest breadth 10, least breadth 9 mill. (*Pfr.*)

Helix Woodiana, *Pfr. in Proc. Zool. Soc.* 1851, p. ; *Ic.* n. 946. t. 144. f. 7, 8; *Mon. Suppl.* 87.
Reeve, n. 600. t. 107.

Hab. Ceylon (*Layard*).

c. *Singapore.*

55. NANINA LYCHNIA.

Shell imperforate, conic, much depressed, thin, translucent, polished, fuscous; spire conic, rather blunt; suture bordered; whorls six and a half, narrow, rather flat, the last scarcely broader, with a sharp compressed keel at its periphery, moderately convex beneath, excavated in the centre; aperture scarcely oblique, narrow, axe-shaped; peristome simple, sharp, with the lower margin arched, slightly thickened towards the umbilical region. Height 5½, greatest breadth not quite 12, least breadth 11 mill. (*B.*)

Helix Lychnia, *Benson in Ann. & Mag. Nat. Hist.* 2nd ser. x. p.
Reeve, n. . t. .
Pfr. Mon. Suppl. 626.

Hab. Isle of Singapore (*Bacon*).

56. NANINA NANINOIDES. B.M.

Shell perforate, orbiculate-convex, rather solid, pale fulvous, distinctly and closely striated above, often slightly decussated with obsolete concentric lines, nearly smooth beneath, distantly striatulate; spire depressedly conoidal, apex obtuse; whorls six, very slightly convex, the last rather angular, impressed in the middle; aperture transversely lunar; peristome straight, obtuse, rather thickened, very slightly reflected at the open perforation. Lat. maj. 25, min. 22, alt. 13 mill.

Helix naninoides, *Bens. Ann. Nat. Hist.* ix. 486.
Phil. Icon. ii. 9. 2. t. 6. f. 3.
Chemn. ed. 2, *Helix*, n. 158. t. 25. f. 7, 8.
Pfr. Mon. Helic. i. 70; *Ic.* i. 193.
Nanina (Xesta) naninoides, *Alb.* 59.

Hab. Singapore; Chusan.

d. *China.*

57. NANINA CINNAMOMEA.

Shell subperforated, depressed, thin, bright, diaphanous, very minutely and irregularly striated, cinnamon; suture moderate;

whorls seven, narrow, scarcely convex; umbilicus small, half-covered; aperture rather oblique, semilunar; peristome simple, thin, acute. Lat. maj. 22, min. 20, alt. 11 mill.

Helix cinnamomea, *Val. in Mus. Paris.*
Eydoux in Guérin, Mag. 1838, t. 116. f. 1.
Reeve, n. 442. t. 83.
Pfr. Mon. Helic. i. 54.
Nanina (Xesta) cinnamomea, *Alb.* 58.

Hab. Natunas Archipelago, Chinese Sea.

58. NANINA PFEIFFERI.

Shell subperforate, orbiculate-convex, solid, smooth, bright, very finely plaited at the submarginate suture, chestnut-red, apex fulvous; spire slightly elevated; whorls six to six and a half, nearly level, the last rounded, subdepressed; aperture lunar, concolorous within; peristome simple, dextral margin sinuated, acute, basal slightly thickened, callous; columellar margin rather reflected. Lat. maj. 28, min. 25, alt. 16 mill.

Helix Pfeifferi (Nanina?), *Phil. in Arch. f. Nat.* 1845, i. 62.
Chemn. ed. 2, *Helix*, n. 172. t. 31. f. 9, 10.
Pfr. Mon. Helic. i. 54; *Ic.* i. 204.
Desh. Helic. 163. n. 217. t. 99. f. 1–3.
Lister, t. 60. f. 57?
Nanina (Xesta) Pfeifferi, *Alb.* 59.

Hab. China.

59. NANINA REDFIELDI.

Shell umbilicated, conoidally globose, thin, irregularly striated and very obsoletely decussated, diaphanous, shining, fulvid horn-coloured; spire conoidal, rather blunt; whorls five and a half, convex, enlarging regularly, the last inflated, not descending; aperture little oblique, lunate-roundish, higher than broad, pearly within; peristome simple, straight, sharp, with distant margins; columellar margin nearly perpendicular, dilated above, half covering the narrow umbilicus. Height 14, greatest breadth 17, least breadth 15 mill. (*Pfr.*)

Helix Redfieldi, *Pfr. in Proc. Zool. Soc.* 1852, p. ; *Ic.* n. 1104. t. 161. f. 21, 22; *Mon. Suppl.* 80.
Reeve, n. 688. t. 118.

Hab. Shang Hi, China (*Fortune*).

60. NANINA EPIXANTHA.

Shell depressed, faintly striated and very minutely granulated under a lens, shining, yellowish horn-colour; spire scarcely

convex; apex blunt; suture impressed; whorls four, little convex, enlarging rapidly, the last not descending, more convex beneath; umbilicus narrow, forming about one-eighth of the total breadth, open; aperture scarcely oblique, roundish-lunate; peristome simple, straight; upper margin slightly depressed, columellar margin expanded into a triangular lamina. Height 8, greatest breadth 15, least breadth 13 mill. (*Pfr.*)

Helix epixantha, *Pfr. in Zeitschr. f. Mal.* 1850, p. 70; *Ic.* n. 869. t. 134. f. 13–15; *Mon. Suppl.* 84.
Reeve, n. 454. t. 84.

Hab. Shang Hi, China (*Fortune*).

e. *Japan.*

61. Nanina conospira.

Shell openly perforate, globose-conic, rather thin, faintly striated, little shining, pale horn-coloured; spire conic, with the outlines convex and the apex rather pointed; whorls five and a half, convex, the last rounded, not descending; aperture little oblique, nearly semicircular; peristome simple, straight, with distant margins; columellar margin somewhat dilated, expanded. Height 5, greatest breadth 6, least breadth 5½ mill. (*Pfr.*)

Helix conospira, *Pfr. in Z. f. M.* 1851, p. 14; *Ic.* n. 963. t. 146. f. 17, 18; *Mon. Suppl.* 50.

Hab. Japan.

62. Nanina Sieboldtiana.

Shell scarcely perforate, globular, thin, horn-coloured, pellucid, slightly striate and very obsoletely decussate; spire short, conoidal, rather acuminate; whorls five and a half, moderately convex, the last one ventricose; aperture lunate-circular; peristome simple, sharp, with the columellar margin arcuate, dilated, convexly reflected. Height 13, greatest breadth 18, least breadth 15½ mill. (*Pfr.*)

Helix Sieboldtiana, *Pfr. in Z. f. M.* 1850, p. 87; *Mon. Suppl.* 42.
Reeve, n. 495. t. 91.

Helix ravida, *Pfr. Mon.* i. 42. n. 69; *Ic.* i. 201. t. 31. f. 1, 2 (not *Benson*).

Hab. Japan (*Sieboldt*).

f. *Sumatra.*

63. Nanina castanea.

Shell perforated, subglobose, obscure, chestnut, with an adnate red and white band; whorls striated. Lat. 17 lin.

Helix castanea, *Müll. Verm.* ii. 67. n. 262.
Chemn. ix. pt. 2. 135. t. 131. f. 1177, 1178.
Pfr. Mon. Helic. i. 44.
Nanina castanea, *Beck, Ind.* 4.
Hab. Sumatra.

64. NANINA CONVOLUTA.

Shell orbiculate-depressed, thin, smooth, fragile, brownish horn-coloured, with a single white peripheral band; spire moderately produced; whorls five, narrow, moderately convex, enlarging slowly, the last larger, broader, perforated beneath; aperture semilunate; peristome simple, sharp; columellar margin scarcely reflexed. Height 10, breadth 16 mill. (*Desh.*)

Helix convoluta, *Desh. in Fér. Hist.* i. 401. n. 255 *bis*, t. 87. f. 2.
Pfr. Mon. Suppl. 48.
Hab. Sumatra.

65. NANINA UMBILICARIA.

Shell perforated, orbiculate-convex, solid, opake, bright, irregularly striated, white, ornamented with three unequal chestnut bands, one at the suture, two at the outline, basal area chestnut; whorls seven, scarcely convex, the last obsoletely angled; aperture oblique, wide, lunar; peristome simple, obtuse, basal margin slightly thickened; columellar margin dilated, reflected, not covering the perforation. Lat. maj. 33, min. 28, alt. 17 mill.

Helix umbilicaria, *Le Guillon in Revue Zool.* 1842, p. 137.
Chemn. ed. 2, *Helix*, n. 63. t. 11. f. 14, 15.
Pfr. Mon. Helic. i. 64; *Ic.* i. 92.
Nanina (Xesta) umbilicaria, *Alb.* 59.
Hab. Sumatra.

g. *Java.*

66. NANINA INQUINATA.

Shell subperforate, conical-semiglobose, thin, nitidulous, minutely granulated, fawn-coloured; whorls five and a half, nearly level, the last sprinkled with brown spots and flamelets, obsoletely keeled, rounded in front; aperture subrhombic lunar; peristome simple, acute. Lat. maj. 28, min. 25, alt. 16 mill.

Helix inquinata, *V. d. Busch in Phil. Icon.* i. 1. 10. t. 1. f. 4.
Pfr. Symb. ii. 19; *Mon. Helic.* i. 46; *Ic.* i. 202.
Chemn. ed. 2, *Helix*, n. 169. t. 31. f. 5, 6.
Reeve, n. 399. t. 76.
Nanina (Hemiplecta) inquinata, *Alb.* 60.
Hab. Java.

67. Nanina gemina. B.M.

Shell very narrowly umbilicated, depressedly-turbinated, obsoletely angulated, irregularly subgranular with concentric and oblique striæ, brunneous, beneath pale, lutescent, surrounded in the middle by a white band, adnate with a narrower rufous band; whorls six, rapidly increasing, scarcely convex; aperture lunate-oval; peristome simple, inflected above. Lat. maj. 49, min. 41, alt. 28 mill.

Helix gemina, *V. d. Busch in Phil. Icon.* i. 1. p. 9. t. 1. f. 1 (Nanina?).
Pfr. Symb. ii. 18; *Mon. Helic.* i. 43.
Hab. Java.

68. Nanina halata.

Shell scarcely perforate, conoidal, thin, smooth, diaphanous, bluish-green, uniform, or with two pale red bands; spire convex-conoidal, dusty, with the apex rather blunt; whorls six, moderately convex, the last one not descending, obtusely angulated in the middle, rounded anteriorly, convex and shining beneath; aperture oblique, lunate, somewhat trapezoidal; peristome simple, straight, sharp, with the margins distant from each other, columellar margin reflected above in a very small lamina. Height 19, greatest breadth 28, least breadth 25 mill. (*Pfr.*)

Nanina halata, *Mouss. Jav. Moll.* 112. t. 21. f. 2.
Alb. 60 (Hemiplecta).
Helix halata, *Reeve, Conch. Icon.* n. 486. t. 90.
Pfr. Ic. n. 929. t. 142. f. 9, 10; *Mon. Suppl.* 45.
Hab. Dompo, Java (*Zollinger*).

69. Nanina bataviana.

Shell perforated, depressedly-globose, thin, obtusely keeled, above cinnamon-coloured, obliquely closely costulated, chestnut beneath, striated, pale towards the umbilicus, umbilical area chestnut; whorls six and a half, very slightly convex; aperture angulately-lunar; peristome nearly simple, archedly reflected at the perforation. Lat. maj. $33\frac{2}{3}$, min. 29, alt. $17\frac{1}{2}$ mill.

Helix bataviana, *V. d. Busch in Phil. Icon.* i. 1. p. 9. t. 1. f. 3.
Pfr. Mon. Helic. i. 77 (Nanina?); *Symb.* ii. 17; *Ic.* i. 87.
Chemn. ed. 2, *Helix*, n. 58. t. 11. f. 1–3.
Reeve, n. 463. t. 86.
Nanina bataviana, *Mouss. Jav. Moll.* 17. t. 1. f. 1.
Alb. 60 (Hemiplecta).
Hab. Java.

70. NANINA CINCTA. B.M.

Shell depressed above, inflated beneath, longitudinally striated, umbilicated, red-brown, ornamented with a black or brown band above the middle of the whorls; whorls four; spire planulate; aperture somewhat rounded; lip simple; columella smooth. Lat. 23, alt. 15 mill.

Helix cincta, *Lea, Obs.* i. 168. t. 19. f. 68.
Pfr. Mon. Helic. i. 54.
Hab. Java?

71. NANINA JAVANICA. B.M.

Shell perforated, orbiculate-convex, closely costulate-striated above, nearly smooth beneath, lutescent-horny, zoned with three narrow red bands, two near the margin, the third near the suture; spire short; whorls six, nearly level, the last slightly keeled; keel vanishing in front; umbilical area red; aperture somewhat angularly lunar; peristome simple, straight; columellar margin a little dilated at the open perforation, slightly reflected. Lat. maj. 28, min. 23, alt. 15–16 mill.

Helix javanica, *Lam.* 40. p. 76; ed. *Dh.* p. 45.
Chemn. ed. 2, *Helix*, n. 62. t. 11. f. 12, 13.
Pfr. Mon. Helic. i. 64; *Ic.* i. 91.
Desh. Hist. Hel. 187. n. 250.
Reeve, n. 396. t. 76.
Helix javacensis (Helicella), *Fér. Pr.* 234; *Hist.* t. 92. f. 2.
Nanina javanensis, *Gray in Proc. Zool. Soc.* 1834, p. 59.
Nanina javana, *Beck, Ind.* 4.
Nanina javanica, *Mouss. Jav. Moll.* 15. t. 1. f. 3.
Alb. 59 (Xesta).
Hab. Java.

72. NANINA CENTRALIS.

Shell perforate, conic-orbiculate, keeled, faintly striated above with excessively minute granulations, cinnamon-coloured; spire conic, with the outlines rectilinear; whorls five and a half, flattened above, the last pale in the region of the keel, convex and shining beneath, obscurely cinnamon-coloured round the perforation; aperture obliquely subtrapezoid; peristome simple, inflected round the perforation. Height 12, greatest breadth 22, least breadth 20 mill. (*Mouss.*)

Nanina centralis, *Mousson, Jav. Moll.* 17. t. 2. f. 1.
Alb. 60 (Hemiplecta).
Helix centralis, *Pfr. Mon. Suppl.* 78.
Hab. Java (*Zollinger*).

73. Nanina ryssolemma.

Shell sinistral, orbicular, solid, opake, yellowish-fuscous above, sculptured with serial coarse impressions, paler beneath, nearly smooth, whitish in the umbilical region; spire scarcely raised, very blunt; whorls five and a half, flattened, the last angled, but rounded towards the aperture, ventricose beneath, slightly descending towards the umbilicus, which is wide and deep; aperture very oblique, roundish-lunate, pearly within, with a fuscous edge; peristome straight, sharp, with the margins joined by a rather thick callus; columellar margin rectilinear, produced above into a triangular lamina. Height 19, greatest breadth 40, least breadth 33 mill. (*Alb.*)

Nanina ryssolemma, *Albers in Z. f. M.* 1852, p. 86.
Helix ryssolemma, *Pfr. Mon. Suppl.* 634.
Hab. Java?

h. *Philippine Islands.*

74. Nanina gradata.

Shell imperforate, globose-turbinate, striatulate, thin, hyaline; spire turbinated, apex acute; whorls six, slightly convex, graduated, the last acutely keeled in the middle, convex beneath, under a lens very minutely striated concentrically; aperture squarish-lunar; peristome simple, acute, columellar margin slightly and vertically descending. Lat. maj. 5, min. $4\frac{2}{3}$, alt. 5 mill.

Helix scalarina, *Pfr. Proc. Zool. Soc.* 1846, p. 110; *in Z. f. M.* 1851, p. 128.
Helix gradata, *Pfr. Mon.* i. 38. n. 60 (not *Gould*).
Reeve, n. 165. t. 37.
Hab. Leyte, Philippines.

75. Nanina fulvida. B.M.

Shell subperforated, globosely-turbinated, thin, pellucid, pale fulvescent, very closely granulose above (under a lens), glabrous beneath, bright; spire elate, apex obtuse; whorls five and a half, the highest plane, the last one and a half rounded; aperture lunar; peristome simple; columellar margin slightly thickened, reflected at the obsolete perforation. Lat. maj. 31, min. $27\frac{1}{2}$, alt. 22 mill.

Helix fulvida, *Pfr. Proc. Zool. Soc.* 1842, p. 87.
Phil. Icon. i. 2. p. 21. t. 2. f. 2.
Chemn. ed. 2, *Helix*, n. 171. t. 31. f. 11, 12.

Helix fulvida (Nanina?), *Pfr. Symb.* ii. 18 ; *Mon. Helic.* i. 45 ; *Ic.* i. 204.
Reeve, Conch. Icon. n. 29. t. 7.
Nanina (Hemiplecta) fulvida, *Alb.* 60.
Hab. Mindanao, Philippines.

76. NANINA CONOIDALIS.

Shell orbiculate-conoidal, with the perforation almost covered, elevated above, convex beneath, with radiating striæ, pale brownish; whorls five, bordered above, reticulate-striated or wrinkled, reddish-brown violaceous, the last with a narrow band of chestnut-colour; peristome simple, imperceptibly thickened. Height 21, greatest breadth 32 mill. (*Adams & Reeve.*)

Helix conoidalis, *A. Adams & Reeve, Voy. Samarang, Moll.* 63. t. 16. f. 11.
Reeve, Conch. Icon. n. 523. t. 96.
Pfr. Mon. Suppl. 46.
Hab. Isle of Mindoro.

77. NANINA SPECTABILIS.

Shell subperforated, turbinately-depressed, solid, very bright, horny luteous, ornamented with one percurrent red or blackish band; spire more or less elevated, apex often reddish; whorls five and a half, slightly convex, the last angulated beneath the band; aperture widely lunar; peristome simple, acute; columellar margin slightly reflected, covering the perforation. Lat. maj. 17, min. 15, alt. 10 mill.

Helix spectabilis, *Pfr. Proc. Zool. Soc.* 1845, p. 41.
Phil. Icon. i. 7. p. 155. t. 4. f. 13.
Chemn. ed. 2, *Helix*, n. 165. t. 32. f. 3, 4.
Pfr. Mon. Helic. i. 47 ; *Ic.* i. 199.
Desh. l. c. 164. n. 219. t. 97. f. 11–13.
Reeve, n. 148. t. 34.
β. Helix spectabilis, var., *Chemn.* ed. 2, *Helix*, t. 32. f. 5, 6.
Nanina (Microcystis) spectabilis, *Alb.* 60.
Var. β. Vitrina fusco-succinea, *Beck, MSS.*
Hab. Samar, Philippines.

78. NANINA GEMMA.

Shell scarcely perforate, conoidally orbicular, thin, smooth, shining, pellucid, greenish-glassy ; spire depressed conoidal ; suture slightly bordered ; whorls four, very little convex, enlarging regularly, the last not descending anteriorly ; aperture little oblique, roundish-lunate ; peristome simple, straight ; columellar

margin short, arched, a little reflected above. Height 5, greatest breadth 9, least breadth 7 mill. (*Pfr.*)

Helix gemma, *Pfr. in Proc. Zool. Soc.* 1848, p. 109; *Z. f. M.* 1848, p. 90; *Ic.* n. 762. t. 122. f. 19, 20; *Mon. Suppl.* 49. *Reeve*, n. 168. t. 37.

Vitrina suturalis *a*, *Beck*, *MSS.*

β. Smaller, whitish-glassy, with the spire less elevated.—*Pfr. Ic.* t. 122. f. 21.

Vitrina suturalis *β*, *Beck*, *MSS.*

Microcystis margarita, *Beck*, *MSS.*
Mörch, *Cat. Yold.* 2. n. 30.

Hab. Albulug, island of Zugon; var. *β*. from Camiguing (*H. Cuming*).

This shell differs from *H. glauca* by its spire less elevated, and by the more slowly increasing whorls, the last one being narrower.

79. Nanina maxima.

Shell perforated, depressed, slightly turbinated, solid, heavy, obliquely and irregularly striated, fulvous above, marked with broader and narrower yellow bands; spire subturbinate, with the apex rather blunt; suture deep; whorls six and a half, enlarging slowly, the upper ones flat, the following regularly vaulted, the last keeled at its periphery, moderately convex, shining, chestnut-coloured beneath; aperture little oblique, lunate, milky-white within; peristome simple, straight, blunt, with distant margins; basal margin somewhat thickened within, shortly dilated above and almost covering the perforation. Height 42, greatest breadth 90, least breadth 77 mill. (*Pfr.*)

Helix maxima, *Pfr. in Proc. Zool. Soc.* 1853, p. ; *Mon. Suppl.* 627.

Hab. Philippine Islands.

80. Nanina Oweniana.

Shell perforated, turbinately depressed, thin, radiatingly striated above and decussated with extremely crowded spiral striæ, not shining, fulvous; spire shortly conoidal, blunt; suture bordered; whorls four and a half, enlarging gradually, convex, the last not descending, with a pale keel at its periphery and a rufous band below the keel, horny-greenish and shining beneath, with irregularly impressed spiral lines; aperture nearly diagonal, lunate, rather rhomboidal, pearly within; peristome simple, straight,

with distant margins; columellar margin declivous, callous, sinuated above, shortly dilated and reflexed near the perforation. Height 17, greatest breadth 32, least breadth 26½ mill. (*Pfr.*)

Helix Oweniana, *Pfr. in Proc. Zool. Soc.* 1853, p. ; *Mon. Suppl.* 628.

Hab. Philippine Islands.

81. Nanina Armida.

Shell subperforate, rather turbinate, thin, faintly and minutely striated, diaphanous, slightly shining, fulvous horn-coloured; spire convexly conoidal, with a subtle and rather blunt apex; suture impressed, bordered with white; whorls six, moderately convex, enlarging gradually, the last not descending, furnished with a short, sharp, white keel, more convex beneath; aperture nearly perpendicular, lunate, slightly angled; peristome simple, straight, with distant margins; columellar margin declivous, slightly thickened above. Height 8, greatest breadth 16, least breadth 14 mill. (*Pfr.*)

Helix Armida, *Pfr. in Z. f. M.* 1853, p. 53; *Mon. Suppl.* 628.

Hab. Mount Isarog, Isle of Luzon (*H. Cuming*).

82. Nanina ceratodes.

Shell subperforated, globosely-depressed, thin, minutely striatulate, nitidulous, pellucid, horny; spire scarcely elevated; whorls five, subplanulate, increasing rapidly, the last subdepressed; aperture ample, obliquely lunar; peristome simple, acute; columellar margin very slightly reflected, nearly hiding the perforation. Lat. maj. 16½, min. 14, alt. 9 mill.

Helix ceratodes, *Pfr. in Proc. Zool. Soc.* 1845, p. 128.
Chemn. ed. 2, *Helix*, n. 690. t. 110. f. 16, 17.
Pfr. Mon. Helic. i. 57.
Reeve, n. 150. t. 34. f. 147–150.
Vitrina centralis, *Beck, MSS.*

Hab. Luzon and Mindoro, Philippines.

83. Nanina succinea.

Shell depressed, obsoletely perforated, thin, pellucid, bright, amber-like; suture moderate, slightly margined; whorls five, increasing rapidly, very slightly convex; aperture lunar; peristome simple, acute; columellar margin slightly reflected, covering the obsolete perforation. Lat. maj. 10, min. 8½, alt. 6 mill.

Helix succinea, *Pfr. in Proc. Zool. Soc.* 1845, p. 39.
Chemn. ed. 2, *Helix*, n. 541. t. 87. f. 6–8.
Pfr. Mon. Helic. i. 58.
Reeve, n. 161. t. 36.
Nanina (Microcystis) succinea, *Alb.* 60.
Hab. Luzon and Mindoro, Philippines.

84. Nanina subfusca.

Shell subperforate, depressed, thin, minutely striated, pellucid, brownish horn-coloured; spire scarcely raised; suture slight, somewhat bordered; whorls four and a half, scarcely convex, enlarging rapidly, the last rounded at its periphery, not descending anteriorly; aperture a little oblique, broadly lunate; peristome simple, thin, straight, with convergent margins; right margin rather sinuate, columellar margin nearly perpendicular, scarcely reflected above. Height $6\frac{1}{3}$, greatest breadth $11\frac{1}{2}$, least breadth 10 mill. (*Pfr.*)

Vitrina subfusca, *Beck in Mus. Cuming.*
Helix subfusca, *Pfr. in Proc. Zool. Soc.* 1848, p. 109; *Z. f. M.* 1848, p. 91; *Ic.* n. 761. t. 122. f. 16–18; *Mon. Suppl.* 62.
Hab. Isle of Luzon (*H. Cuming*).

85. Nanina lucidella.

Shell minute, perforated, depressed, striatulate, very bright, brunneous; spire subplanulate; suture white-margined; whorls four, level, the last scarcely more convex beneath, impressed in the middle, very narrowly perforated; aperture obliquely lunar; peristome simple, obtuse; columellar margin steep, scarcely thickened. Lat. maj. $3\frac{3}{4}$, min. 3, alt. 2 mill.

Helix lucidella, *Pfr. Proc. Zool. Soc.* 1846, p. 41; *Mon. Helic.* i. 60.
Reeve, Conch. Icon. n. 164. t. 37.
Hab. Luzon, Philippines.

86. Nanina sagittifera. B.M.

Shell subperforated, depressed, thin, pellucid, obliquely striated and obsoletely wrinkled, fulvous, ornamented with arrow-shaped spots, and a single obsolete red band at the keel; suture impressed, slightly channeled at the last whorl; whorls four and a half, nearly level, the last inflated; aperture very oblique, lunate-oval, milky inside; peristome simple, slightly thickened at the columella, scarcely reflected, upper margin deflected. Lat. maj. 47, min. 38, alt. 26 mill.

Helix sagittifera, *Pfr. in Proc. Zool. Soc.* 1842, p. 86 ; *Mon. Helic.* i. 62; *Ic.* i. 197.
Phil. Icon. i. 4. p. 77. t. 4. f. 1.
(Nanina?) *Pfr. Symb.* ii. 20.
Chemn. ed. 2, *Helix*, n. 163. t. 32. f. 10, 11.
Desh. l. c. 159. n. 211. t. 99. f. 15–19.
Reeve, n. 3. t. 1, and var.
Helix hepatica, *Reeve*, n. 9. t. 3.
Nanina (Ryssota) sagittifera, *Alb.* 61.
Hab. Philippines.

87. Nanina Borneensis.

Shell obliquely perforate, depressed, rather thin, decussated by distinct striæ of growth and numerous oblique impressed lines, dark fulvous ; spire scarcely raised, blunt ; suture bordered with an impressed line ; whorls four, little convex, increasing rapidly, the last one marked at the periphery with a blackish band, which is dilute towards the centre ; more convex beneath and irregularly radiated with chestnut streaks ; aperture oblique, large, transversely lunate-oval, pearly within, with the band translucent ; peristome simple, sharp, with the columellar margin reflected into a short triangular lamina, which covers half the umbilicus. Height 25, greatest breadth 52, least breadth 42 mill. (*Pfr.*)

Helix Borneensis, *Pfr. in Proc. Zool. Soc.* 1849, p. 127 ; *Mon. Suppl.* 70.
Hab. Borneo.

This species in shape, size and habitus greatly resembles *N. sagittifera* ; but its sculpture is different, its spire less raised, its whorls increasing rather slowly, and its aperture is larger and more oval.

88. Nanina ovum. B.M.

Shell slightly perforated, globosely-depressed, obliquely striated and irregularly wrinkled, slightly decussated with impressed lines, very close at the apex, remote and irregular on the last whorls, obtusely keeled, entirely deep fulvous, or ornamented with a pale band above the keel, and a purplish-black band beneath the keel ; suture channeled ; whorls five, tumid above, the last excavated at the columella ; aperture lunate-elliptical, inside bright, milky ; peristome simple, thick, dextral margin archedly dilated. Lat. maj. 115, min. 80, alt. 70 mill.

Helix ovum, *Val. in Humb. Voy. Zool.* ii. 240. t. 57. f. 1.
Fér. in Bull. Zool. 1835, p. 32.
(Nanina?) *Pfr. Symb.* ii. 19.
Chemn. ed. 2, *Helix*, n. 155. t. 25. f. 1, 2.
Pfr. Mon. Helic. i. 66; *Ic.* i. 190.
Desh. in Fér. i. 155. n. 207.
Reeve, n. 1. t. 1. f. 1, 2, 4.
Nanina (Ryssota) ovum, *Alb.* 61.
Helix meridionalis, *Gray in Wood, Suppl.* t. 7. f. 42 (not *Risso*).
Helix (Helicogena) otaheitana, *Fér. Pr.* 49; *Hist.* t. 29. f. 4, 5.
Eurycratera otaheitana, *Beck, Ind.* 46.
Chromocochlea tahitana, *Hartm. Erd- u. Süssw. Gart.* i. 186. t. 65, 66.
Hab. Philippines.

89. Nanina nobilis.

Shell narrowly umbilicate, depressed, rather turbinate, solid, striated, slightly decussated with impressed spiral and oblique lines, fulvous; spire little raised, shortly turbinate; whorls six, scarcely convex, the last surrounded in the middle with a raised, blunt ridge, below which is a dark chestnut-coloured band, which is diffuse and vanishes towards the umbilicus; aperture large, little oblique, broadly lunate, pearly within; peristome simple, straight; columellar margin reflected into a short triangular lamina near the umbilicus. Height 30, greatest breadth 53, least breadth 45 mill. (*Pfr.*)

Helix nobilis, *Pfr. in Proc. Zool. Soc.* 1849, p. 127; *Ic.* n. 771. t. 125. f. 1, 2; *Mon. Suppl.* 69.
Reeve, n. 381. t. 74.

β. Whitish, with a single narrow peripheric band, beneath which the last whorl is of a pale violaceous colour.

Helix obliquata, *Reeve, Conch. Icon.* n. 384. t. 74.

Hab. Borneo; the variety β. from the Philippine Islands (?).

90. Nanina Mülleri. B.M.

Shell obtectly perforated, convexly-orbiculate, slightly keeled, solid, fulvous, darker beneath, marked with a broad red band beneath the keel; suture linear; whorls four and a half, rapidly increasing, the highest plane, minutely rugulosely reticulated, the last convex towards the aperture, irregularly malleately rugose; aperture lunate-oval; peristome simple, upper margin slightly inflected, columellar a little expanded, covering the perforation. Lat. maj. 39, min. 33, alt. 23 mill.

Helix Mülleri, *Pfr. in Zeitschr. f. Mal.* 1844, p. 178; *Mon. Helic.* i. 67; *Ic.* i. 191.
Chemn. ed. 2, *Helix*, n. 156. t. 25. f. 3, 4.
Desh. in Fér. 160. n. 213. t. 100. f. 11–13.
Reeve, n. 19. t. 4.
Nanina (Ryssota) Mülleri, *Alb.* 61.
Helix ovum γ, *Pfr. Symb.* ii. 20.
Hab. Philippines.

91. NANINA BULLA. B.M.

Shell subperforate, globosely-depressed, very thin, pellucid, very minutely decussated with close spiral and oblique striæ, slightly keeled, pale fulvous, red-zoned at the keel; suture scarcely impressed; spire hardly exserted; whorls four, nearly level; aperture lunate-rounded, iridescent inside, one-banded; peristome simple, upper margin bent inwards, columellar scarcely expanded. Lat. maj. 40, min. 31, alt. 23 mill.

Helix bulla, *Pfr. in Proc. Zool. Soc.* 1842, p. 151; *Mon. Helic.* i. 68; *Ic.* i. 207.
Phil. Icon. i. 4. p. 77. t. 4. f. 2.
Chemn. ed. 2, *Helix*, n. 175. t. 33. f. 3, 4.
Desh. Helic. 161. n. 214. t. 100. f. 6, 7.
Reeve, n. 15. t. 4.
Nanina (Hemiplecta) bulla, *Alb.* 60.
Helix vesica (Nanina?), *Pfr. Symb.* ii. 21 (not *Lea*).
Hab. Philippines.

92. NANINA GUMMATA. B.M.

Shell slightly perforated, conical, somewhat depressed, minutely decussated above with longitudinal and transverse striæ; brown, dull; clothed with a gummy epidermis; smooth beneath, very bright, yellowish-brown, zoned at the margin with a broad luteous band, adnate, with a broader rufous band beneath; whorls six and a half, convex, narrow; aperture wide, lunar; peristome simple; columellar margin thickened, reflected, nearly covering the perforation.

Helix gummata, *Sow. Proc. Zool. Soc.* 1841, p. 25.
Pfr. Symb. ii. 18; *Mon. Helic.* i. 73; *Ic.* i. 216.
Chemn. ed. 2, *Helix*, n. 184. t. 34. f. 1, 2.
Reeve, n. 134. t. 31.
Nanina (Hemiplecta) gummata, *Alb.* 60.
Helix luteofasciata, *Lea, Philad. Trans.* 1841, p. 462. t. 12. f. 13.
Hab. Luzon.

93. Nanina xanthotricha. B.M.

Shell obtectly subperforate, rather depressed, cinnamon, regularly and minutely granulated above and beyond the margin, clothed with a silky epidermis; hairs close, short, golden; suture deep; whorls six, rounded, the last glabrous beneath, shining, the smooth part separated from the granular by a slight angle; aperture wide, lunar, milky inside, brown-margined; peristome simple, acute, columellar margin much thickened. Lat. maj. 31, min. 28, alt. 18 mill.

Helix xanthotricha, *Pfr. Symb.* ii. 21; *Mon. Helic.* i. 74; *Ic.* i. 217.
Chemn. ed. 2, *Helix*, n. 186. t. 34. f. 16, 17.
Desh. Helic. 163. n. 218. t. 99. f. 4–8.
Reeve, t. 31. f. 132 *b*, *c*.
Nanina (Hemiplecta) xanthotricha, *Alb.* 60.
Helix velutina, *Sow. Proc. Zool. Soc.* 1841, p. 25 (not *Lam.*).
Hab. Guimaras.

94. Nanina Mörchii.

Shell perforate, rather depressed, thin, very minutely decussated and granulated, covered with very short bristles, pale horn-coloured, with a reddish-brown peripherical line, and with a chestnut-coloured band beneath; spire short, convex, with the apex prominent; whorls five, moderately convex, the last obsoletely angled at its periphery, smooth and shining round the perforation and a little beyond the basal band, the smooth part touching the granulated part without forming an angle; aperture nearly vertical, roundish-lunate, pearly within, with the bands translucent; peristome simple, sharp; columellar margin very slightly reflected above. Height 12, greatest breadth 20, least breadth 18 mill. (*Pfr.*)

Helix xanthotricha *β*, *Pfr. Mon.* i. 74; *Ic.* t. 34. f. 18, 19.
Reeve, t. 31. f. 132 *a*.
Helix spec. nova?, *Mörch, Cat. Kierulf.* 1. n. 3.
Helix Mörchii, *Pfr. in Z. f. M.* 1851, p. 12; *Mon. Suppl.* 73.
Hab. Negros, Philippines (*H. Cuming*).

95. Nanina setigera. B.M.

Shell obtectly subperforate, somewhat semiglobose, thin, brunneous, upper surface and exterior of the base slightly granulated, clothed with a setigerous epidermis, beneath smooth and shining, with a broad luteous band beneath the margin and around the umbilicus; spire depressedly conoidal; whorls six.

convex; aperture rounded lunar; peristome simple, columellar margin thickened. Lat. maj. 30, min. 27, alt. 20 mill.

Helix setigera, *Sow. Proc. Zool. Soc.* 1841, p. 25.
Pfr. Symb. ii. 21; *Mon. Helic.* i. 74; *Ic.* i. 218.
Delessert, Recueil, t. 38. f. 5.
Chemn. ed. 2, *Helix*, n. 187. t. 34. f. 20, 21.
Chenu, Ill. Conch. t. 25. f. 5.
Reeve, n. 135. t. 31.
Nanina (Hemiplecta) setigera, *Alb.* 60.
Hab. Luzon.

96. Nanina Zeus. B.M.

Shell obliquely perforated, somewhat depressedly-convex, solid, sculptured with oblique wrinkles and raised spiral lines, rufous, ornamented above with white flashing stripes; whorls four and a half, convex, the last convex beneath, angulated in the middle, furrowed beneath the keel with deep, concentric grooves; aperture very oblique, subtrapezoidal, iridescent within; peristome acute, straight; columellar margin short, reflected over the perforation. Lat. maj. 60, min. 47, alt. 30 mill.

Helix Zeus, *Jonas in Proc. Zool. Soc.* 1842, p. 188.
Phil. Icon. i. 3. p. 47. t. 3. f. 1.
Chemn. ed. 2, *Helix*, n. 160. t. 26. f. 4–6.
Fér. Hist. t. 64 A. f. 9.
Pfr. Mon. Helic. 67; *Ic.* i. 195.
Desh. Helic. 156. n. 208. t. 64 A. f. 9; t. 100. f. 1, 2.
Reeve, n. 17. t. 4.
Nanina (Ryssota) Zeus, *Alb.* 62.

β. Smaller, with the umbilicus quite closed. Height 22, breadth 43 mill.
Hab. Philippines.

97. Nanina Lamarckiana.

Shell obliquely perforated, depressed, slightly keeled, thin, irregularly striated and wrinkled, olivaceous-red, ornamented below the keel with a blackish-rufous band, shaded off below; suture impressed; spire scarcely elevated; whorls four and a half, the highest nearly level, very minutely decussated; aperture widely elliptical, milky or opaline inside; peristome simple, thin, dilated at the columella, reflected, half covering the oblique umbilicus. Lat. maj. 60, min. 48, alt. 32 mill.

Helix Lamarckiana, *Lea in Tr. Am. Phil. Soc.* vii. 461. t. 12. f. 11.
Chemn. ed. 2, *Helix*, n. 159. t. 26. f. 1–3.
Pfr. Symb. ii. 19; *Mon. Helic.* i. 67; *Ic.* i. 194.

Helix Lamarkiana, *Desh. Helic.* 158. n. 210. t. 102. f. 1–3.
Reeve, n. 20. t. 4.
Nanina (Ryssota) Lamarckiana, *Alb.* 62.

β. Smaller, paler, thinner, more distinctly keeled. Height 24, greatest breadth 55, least breadth 43 mill. B.M.

Helix caducior, *Reeve, Conch. Icon.* n. 12. t. 3.
Hab. Philippines (*Cuming*).

98. Nanina semiglobosa. B.M.

Shell subperforated, semiglobose, thin, lutescent-horny, very minutely granulated above; suture scarcely impressed; whorls six, plane, the last keeled, beneath the keel smooth, shining, marked with a pale brown band; aperture lunate-elliptical, banded inside; peristome simple, acute; columellar margin widely reflected, half covering the very narrow umbilicus. Lat. maj. 44, min. 39, alt. 26 mill.

Helix semiglobosa, *Pfr. Proc. Zool. Soc.* 1845, p. 38; *Mon. Helic.* i. 75.
Reeve, n. 118. t. 27.

γ. Smaller, with five whorls, of which the last is rather convex above. Height 15, greatest breadth 30, least breadth 27 mill.
Hab. Philippines.

99. Nanina porphyria. B.M.

Shell perforated, depressed, solid, rugosely striated obliquely, rufous, marbled with very numerous subprominent pale yellow spots and stripes, keeled, below the keel brown-banded, beneath olive-fulvous, brighter; whorls four and a half, planulate, regularly increasing, the last openly channeled round the perforation; aperture subrhombic; peristome simple, thin, columellar margin archedly reflected. Lat. maj. 43, min. 38, alt. 26 mill.

Helix porphyria, *Pfr. Proc. Zool. Soc.* 1842, p. 87.
(Nanina?) *Pfr. Symb.* ii. 20; *Mon. Helic.* i. 76; *Ic.* i. 198.
Phil. Icon. i. 2. p. 22. t. 2. f. 3.
Chemn. ed. 2, *Helix*, n. 164. t. 32. f. 12, 13.
Desh. Helic. 157. n. 209. t. 100. f. 8–10.
Reeve, n. 8. t. 3.
Nanina (Ryssota) porphyrea, *Alb.* 62.
Hab. Philippines.

100. Nanina Darondeani.

Shell orbicular, umbilicated, keeled, depressedly-convex above, pale olive-brown, beneath convex, chestnut; whorls five,

obliquely wrinkled, finely and closely transversely striated; aperture rounded-oval, concave towards the narrow umbilicus, brown inside, white-banded; peristome acute; columella white, widely reflected above the umbilicus; umbilicus moderate, deep, depressed at the margin. Lat. 41, alt. 19 mill.

Helix Darondeani, *Soul. Revue Zool.* 1842, p. 101.
Pfr. Mon. Helic. i. 76; *Voy. de la Bonite, Moll.* t. 28. f. 21–23.

Hab. Luzon, Philippines.

101. Nanina Cuvieriana. B.M.?

Shell openly perforated, orbiculate, thin, pellucid, obliquely striated, keeled, olivaceous-lutescent, ornamented with a broad rufous band beneath keel, shaded off downwards; spire scarcely elate; whorls five, planulate, the last convex beneath; aperture wide, lunar; peristome simple, acute, columellar margin very slightly reflected. Lat. maj. 32, min. 28, alt. 14–15 mill.

Helix Cuvieriana, *Lea, Trans. Am. Phil. Soc.* vii. 461. t. 12. f. 12.
(Nanina?) *Pfr. Symb.* ii. 18; *Mon. Helic.* i. 77; *Ic.* i. 196.
Chemn. ed. 2, *Helix*, n. 161. t. 26. f. 7–9.
Reeve, n. 28. t. 7.
Nanina (Hemiplecta) Cuvieriana, *Alb.* 60.

Hab. Luzon, Philippines.

102. Nanina exilis.

Shell perforated, nearly discoidal, keeled, pellucid, thin, pale fulvous, depressed above, sharply striated, more convex beneath, and with less distinct striæ; whorls six, nearly level, the last not descending, ornamented beneath the keel with a narrow rufous band; umbilical area sometimes reddish-brown; aperture wide, elliptical; peristome simple, acute, columellar margin very slightly reflected. Lat. maj. 35, min. 30, alt. 15 mill.

Helix exilis, *Müll. Verm.* ii. 22. n. 221.
Pfr. Mon. Helic. i. 78; *Ic.* n. 887. t. 137. f. 10–12.
Desh. Helic. 364. n. 431. t. 64 A. f. 1.
Reeve, n. 16. t. 4.
Helix explanata, *Quoy & Gaimard, Astrol. Zool.* ii. 123. t. 10. f. 10–13!
Lam. ed. *Desh.* 194. p. 121.
Fér. Hist. t. 64 A. f. 1?
Nanina exilis, *Beck, Ind.* 4.
Gray, Proc. Zool. Soc. 1834, p. 59?

Hab. New Guinea; Philippines.

103. NANINA BIANGULATA.

Shell subperforated, scalariform, thin, horny-rubelline, faintly striated, rather shining; whorls seven, gradually increasing, the last bicarinate; lower keel thread-like at the margin, the higher passing through all the whorls; aperture lunate-oval; peristome simple, acute, almost hiding the very narrow perforation. Lat. maj. 15, min. 13½, alt. 9 mill.

Helix biangulata, *Pfr. in Phil. Icon.* i. 7. p. 155. t. 5. f. 12; *Proc. Zool. Soc.* 1845, p. 40; *Mon. Helic.* i. 80; *Ic.* ii. 125.
Chemn. ed. 2, *Helix*, n. 550. t. 88. f. 6, 7.
Reeve, n. 157. t. 35.
Alb. 118 (Thea).

Hab. Luzon, Philippines.

104. NANINA FILOCINCTA.

Shell perforated, depressed, thin, pellucid, horny, striatulate, bright; spire scarcely elevated, obtuse; whorls five and a half, slightly convex, keeled, the last convex beneath; keel thread-like, conspicuous on the higher whorls, but not exserted; aperture vertical, somewhat ear-shaped lunar; peristome simple, straight, columellar margin very oblique, elongated, descending, suddenly ascending on the right. Lat. maj. 11, min. 10, alt. 5½ mill.

Helix filocincta, *Pfr. Proc. Zool. Soc.* 1845, p. 124; *Mon. Helic.* i. 82; *Ic.* ii. 127.
Chemn. ed. 2, *Helix*, n. 553. t. 88. f. 24–26.
Reeve, n. 158. t. 36.
Nanina (Xesta) filocincta, *Alb.* 59.

Hab. Mindanao, Philippines.

105. NANINA EXCENTRICA.

Shell subperforated, nearly level above, inflated beneath, thin, waxen, shining, slightly ridged with excentric striæ, acutely keeled; whorls four, plane above, rapidly increasing; aperture hatchet-shaped; peristome simple, acute, dilately reflected at the very narrow perforation. Lat. maj. 18, min. 15, alt. 8½ mill.

Helix excentrica, *Pfr. Proc. Zool. Soc.* 1845, p. 41; *Mon. Helic.* i. 83.
Chemn. ed. 2, *Helix*, n. 552. t. 88. f. 14–16.
Reeve, n. 152. t. 34.
Alb. 111 (Corasia).

Hab. Philippines.

106. Nanina Panayensis. B.M.

Shell obtectly perforated, depressed, orbicular, keeled, rather thick, greyish-brown above, very minutely granulated, radiately striated beneath, very bright, olivaceous; spire depressedly conoidal; whorls six, planulate, the last not deflected; aperture angulate-lunar, whitish inside; peristome simple, thickened below, slightly expanded at the columella. Lat. maj. 44, min. 40, alt. 21 mill.

Animal, B.M. Caudal gland very large; teeth four-sided, close.

Carocolla Panayensis, *Brod. MSS.*
Helix Panayensis, *Pfr. Proc. Zool. Soc.* 1842, p. 86; *Symb.* ii. 36; *Mon. Helic.* i. 75; iii. 166.
Chemn. ed. 2, *Helix*, n. 215. t. 30. f. 1–3.
Nanina (Hemiplecta) Panayensis, *Albers, Heliceen*, 61.
Helix semigranosa, var., *Reeve, Icon.* t. 27. f. 115, 117 *a*.
β. Helix Panayensis, var., *Chemn.* ed. 2, *Helix*, t. 30. f. 4.
Hab. Panay; β. Cayagan, Philippines.

107. Nanina semigranosa. B.M.

Shell subperforate, depressed, suborbicular, pale olive-brown, apex reddish, granulated above, smooth beneath, shining; spire conoidally depressed; whorls six, the highest subplanulate, the two last rounded, the last obtusely angulated in the middle, with one rufous band; aperture wide, lunar; peristome simple, slightly thickened at the base. Lat. maj. 36, min. 32, alt. 20 mill.

Helix semigranosa, *Sow. in Proc. Zool. Soc.* 1841, p. 26.
Pfr. Symb. ii. 21; *Mon. Helic.* i. 74; iii. 166.
Chemn. ed. 2, *Helix*, n. 185. t. 34. f. 3, 4.
Reeve, t. 27. f. 117 *b*.
Helix Blainvilliana, *Lea in Philad. Trans.* vii. 463. t. 12. f. 15.
Nanina (Hemiplecta) semigranosa, *Albers, Heliceen*, 61.
Hab. Luzon, Philippines.

i. *Moluccas.*

108. Nanina simplex.

Shell orbiculate-convex, imperforate, slightly impressed beneath, obliquely striated, pale reddish (more darkly banded); spire subconoidal, apex reddish; lip simple, rather acute. Lat. 40, alt. 23 mill.

Helix (Helicogena) simplex, *Lam.* 42. p. 77, ed. *Desh.* 45.
Fér. Pr. Add. 48 *bis*; *Hist.* t. 25 B. f. 6.
Pfr. Mon. Helic. ii. 20.
Desh. Hist. Hel. 162. n. 215.
Eurycratera simplex, *Beck, Ind.* 46.
Hab. Amboina.

109. Nanina misella. B.M.

Shell imperforate, somewhat convexly-orbiculate, thin, very obscurely striatulate, bright, pellucid, pale horny; whorls five and a half, nearly level, the last keeled, slightly convex beneath, impressed in the middle; aperture subvertical, angulate-lunar; peristome simple, thin, columellar margin obliquely arched, slightly thickened. Lat. maj. 8, min. 7, alt. 4 mill.

Helix (Helicostyla) misella, *Fér. Pr.* 306; *in Voy. de Freycinet, Zool.* 473.
Helix misella, *Quoy & Gaim. Astrol.* ii. 122. t. 10. f. 5–9.
Lam. ed. *Desh.* 195. p. 121.
Chemn. ed. 2, *Helix*, n. 210. t. 29. f. 14–16.
Pfr. Mon. Helic. i. 38; *Ic.* i. 237.
Reeve, n. 632. t. 111.
Nanina (Microcystis) misella, *Alb.* 60.
Caracolla misella, *Beck, Ind.* 31. n. 5.
Hab. Guan Island, Moluccas; Sandwich Islands.

110. Nanina Clairvillia. B.M.

Shell perforated, somewhat turbinated, smooth, lutescent, brown above; whorls six, convex, the last tumid; aperture rounded-lunar; peristome white, obtuse, columellar margin steep, somewhat arched, slightly reflected. Lat. maj. 43, min. 36, alt. 32 mill.

Helix (Helicella) Clairvillia, *Fér. Pr.* 243; *Hist.* t. 91. f. 1.
Pfr. Mon. Helic. i. 43.
Desh. l. c. 182. n. 243.
Nanina Clairvillia, *Gray, Proc. Zool. Soc.* 1834, p. 59.
Beck, Ind. 3.
Geve, t. 26. f. 277 (*Beck*).
β. Helix Clairvillia, var. *a*, *Fér. Hist.* t. 91. f. 2, 3.
Hab. Amboina.

111. Nanina Stuartiæ. B.M.

Shell obsoletely perforated, depressedly turbinated, striated, white, variously ornamented with brown and blackish bands; spire widely conoidal; whorls six, scarcely convex, the last rather

planulate beneath; aperture very oblique, lunar; peristome simple, upper margin arched forwards, columellar slightly reflected, nearly covering the perforation. Lat. maj. 40, min. 36, alt. 26 mill.

Helix Stuartiæ, *Gray in Mus. Brit.*
Pfr. in Zeitschr. f. Mal. 1845, p. 154; *Mon. Helic.* i. 44; *Ic.* i. 315.
Chemn. ed. 2, *Helix*, n. 311. t. 54. f. 9–11.
Fér. Hist. t. 87. f. 5.
Desh. l. c. 185. n. 247.
Reeve, n. 462. t. 86.
Nanina (Xesta) Stuartiæ, *Alb.* 59.
Nanina Steuarti, *Beck, Ind.* 4. n. 24?
Hab. Celebes.

112. Nanina cidaris.

Shell globose-turbinate, rather thin, with oblique wrinkled striæ, shining, pale fulvous; spiral conoidal, with the apex blunt; whorls six, the upper ones scarcely convex, the last one inflate, obsoletely angular, with transverse impressed lines coarsely decussate, with one reddish-brown band at the periphery, rather compressed beneath round the umbilicus, which is very narrow; aperture little oblique, rounded-lunate, pearly inside, with the band shining through; peristome simple, sharp, with the margins convergent, columellar margin reflected above into a triangular lamina. Height 25, greatest breadth 40, least breadth 36 mill. (*Pfr.*)

Helix cidaris, *Lam. Hist. A. s. V.* 43. 77; ed. 2, *Desh.* 45.
Delessert, Recueil, t. 26. f. 11.
Pfr. Mon. i. 45. n. 79; *Ic.* n. 748. t. 122. f. 1–3; *Mon. Suppl.* 43.
Chenu, Illustr. Conch. livr. 72. t. 12. f. 11.
Reeve, n. 464. t. 86.
Nanina (Ryssota) cydaris, *Alb.* 61.
Nanina rapa, *Beck, Ind.* 3.
Hab. Timor.

113. Nanina nemorensis. B.M.

Shell subperforate, orbiculate-conic, solid, bright, white, surrounded with brownish bands; whorls six, scarcely convex; aperture lunate-rounded; peristome simple, acute, basal margin thickened inwards, slightly reflected at the columella. Lat. maj. 33, min. 30, alt. 25 mill.

Helix nemorensis, *Müll. Verm.* ii. ind.
Fér. Pr. 232 (Helicella).
Chemn. ed. 2, *Helix*, n. 183. t. 35. f. 9–11.
Pfr. Mon. Helic. i. 46; *Ic.* i. 215.
Reeve, n. 474. t. 88.
Nanina nemorensis, *Gray in Proc. Zool. Soc.* 1834, p. 59.
Beck, Ind. 4.
Nanina (Xesta) nemorensis, *Alb.* 59.
Var. Helix sulphurea, *Reeve, Conch. Icon.* n. 476. t. 88.
Helix nemoralis, *Müll. Verm.* ii. 62. n. 257.
Helix cretacea, *Born, Mus.* 376. t. 16. f. 1, 2.
Chemn. ix. pt. 2. 119. t. 129. f. 1146, 1147.
Helix Neuvardii, *De Haan* (*Menke, Syn.*).
Hab. Moluccas; New Ireland.

114. Nanina trochus.

Shell perforate, conic, trochiform, rather solid, minutely striated, scarcely shining, white, with a single broad brown band, or several narrow ones, which sometimes are confluent, at the periphery; spire conic; apex white, rather blunt; whorls six, moderately convex, the last not descending, rounded at its periphery, rather flattened beneath; aperture oblique, roundish-lunate, uniformly milk-white within; peristome simple, straight, columellar margin declivous, somewhat thickened and reflected into a very small convex lamina near the open perforation. Height nearly 20, greatest breadth 25, least breadth 22 mill. (*Pfr.*)

Helix trochus, *Müller, Pfr. Mon.* i. 46. n. 82; *Z. f. M.* 1851. p. 10; *Ic.* i. 160. t. 146. f. 3–5; *Mon. Suppl.* 46.
Reeve, n. 475. t. 88.
Hab. Moluccas.

115. Nanina Steursii.

Shell perforate, depressedly turbinate, closely decussated with irregular striæ and impressed spiral lines, not shining, pale yellowish, with a blackish-purple band above and a broad whitish band below the periphery; spire rather pointed; whorls five, enlarging gradually, scarcely convex, the last rather flattened beneath, marked near the perforation, with a fuscous-purple area; aperture oblique, lunate; peristome simple, sharp, with the columellar margin imperceptibly dilated and reflexed. Height 14, greatest breadth 23, least breadth 19 mill. (*Sh.*)

Nanina Steursii, *Shuttleworth in Bern. Mitth.* Aug. 1852, p. 194.
Helix Steursii, *Pfr. Mon. Suppl.* 627.
Hab. Amboina (*V. Steurs*).

116. NANINA STOLEPHORA. B.M.

Shell somewhat obtectly perforated, subdiscoidal, nearly smooth, obliquely striated, obtusely angulated, depressed above, very pale yellowish-red, convex beneath, surrounded beneath the angle with a red band, paler downwards, reticulately striated; whorls four, nearly level; aperture very oblique, strongly depressed; peristome scarcely thickened, margins united by a callus, nearly covering the perforation. Lat. maj. 52, min. 40, alt. 20 mill.

Helix stolephora, *Valenc. in Humb. Voy. Zool.* ii. 242. t. 56. f. 4.
Pfr. in Zeitschr. f. Mal. 1844, p. 179; *Mon. Helic.* i. 52; *Ic.* i. 196.
Chemn. ed. 2, *Helix*, n. 162. t. 32. f. 1, 2.
Desh. Hist. Hel. 159. n. 212. t. 100. f. 3–5.
Reeve, n. 14. t. 4.
Helix (Helicella) buphthalmus, *Fér. Pr.* 238; *Bull. Zool.* 1835, p. 33.
Helix Lamarckiana β, *Pfr. Symb.* ii. 19.
Nanina stolephora, *Pfr. Symb.* ii. 63.
Alb. 61 (Ryssota).
Nanina bicolor, *Pfr. Symb.* i. 36.
Eurycratera stolephora, *Beck, Ind.* 46.
Hab. New Spain (*Valenc.*); Asiatic Archipelago (*Fér.*).

117. NANINA AULICA. B.M.

Shell perforate, depressed, thin, diaphanous, shining, very varying in colours and bands, with radiating striæ and generally spiral irregularly impressed lines above; spire very shortly raised, obtusely conoidal; whorls four and a half, rather flattened, rapidly increasing, the last one depressed, very obsoletely angulated at its periphery, more convex beneath; aperture very large, oblique, truncate-oval, the proportion of its breadth to its height being 6 : 5; peristome simple, straight, with the upper margin descending very slowly, columellar margin arcuate, shortly reflected above. Height 23, greatest breadth 48, least breadth 41 mill. (*Pfr.*)

Helix aulica, *Pfr. in Proc. Zool. Soc.* 1851, p. ; *Ic.* t. 34. f. 4, 5, t. 147. f. 10; *Mon. Suppl.* 61.
Reeve, n. 481. t. 89.

Hab. Moluccas.

118. NANINA LUCTUOSA.

Shell perforated, conoidally depressed, rather thin, distinctly striated, principally near the suture, variously painted and

banded; spire conoidal, with the apex rather pointed and for the most part blackish-violaceous; whorls four and a half, moderately convex, enlarging gradually, the last not descending, more convex beneath; aperture diagonal, lunarly ovate, much broader than high; peristome simple, straight, with the columellar margin very declivous, reflected above into a triangular lamina. Height 17, greatest breadth 32, least breadth 26 mill. (*Pfr.*)

Nanina luctuosa, *Beck, Ind.* 3. n. 2.
Helix luctuosa, *Pfr. Mon. Suppl.* 629.
Helix citrina, var., *Müll.*; *Chemn.*; *Pfr. Mon.* i. 53.

α. Chestnut-coloured above, with a broad white band above the periphery, white beneath, with a brown umbilical spot.—*Chemn.* ix. f. 1174!

β. Brownish-grey above, with the peripherical girdle of the same colour, bordered with brown.—*Chemn.* f. 1175.

γ. White, with a single blackish-brown girdle.—*Chemn.* f. 1171.

Hab. Moluccas.

119. Nanina rapa.

Shell perforated (imperforate) subglobose, with sunken dots, and a sanguine band; whorl deflected inwards above. Lat. 18 lin.

Helix rapa, *Müll. Verm.* ii. 67. n. 261.
Chemn. ix. 2. p. 134. t. 131. f. 1176.
Pfr. in Zeitschr. f. Mal. 1844, p. 178; *Mon. Helic.* i. 62.
Reeve, Conch. Icon. n. 19. t. 4?

Hab. Amboina.

120. Nanina monozonalis.

Shell perforated, orbiculate convex, ventricose, bright, very finely decussated above with close longitudinal and transverse lines, chestnut, with one white zone above the middle; spire scarcely elevated; whorls five, slightly convex, the last inflated, whitish around the open perforation; aperture large, rounded-lunar; peristome acute, columellar margin slightly reflected. Lat. maj. 50, min. 42, alt. 26 mill.

Helix monozonalis, *Lam.* 4. p. 66; ed. *Desh.* p. 29.
Pfr. Mon. Helic. i. 72; *Ic.* n. 994. t. 150. f. 12, 13.
Desh. in Encycl. Méth. ii. 256. n. 126; *in Fér.* i. 182. n. 244 (with a variety?, t. 88. f. 4, 5).
Reeve, n. 467. t. 86.

Helix unizonalis, *Encycl. Méth.* t. 462. f. 6 !
(Helicella) *Fér. Pr.* 241 ; *Hist.* t. 91. f. 4 ! !
Nanina monozonalis, *Gray, Proc. Zool. Soc.* 1834, p. 59.
Beck, Ind. 3. n. 6.
Alb. 61 (Ryssota).
Zonites unizonalis, *Swains. Malac.* 331.

β? With two broad reddish-brown bands. — *Pfr. Ic.* t. 147. f. 14.

Hab. Amboina.

121. NANINA DISTINCTA. B.M.

Shell umbilicate, semiglobose, rather turbinate, solid, faintly striated, minutely foveolate above, fulvous flesh-coloured ; spire broadly conoidal, rather blunt ; whorls five and a half, moderately convex, the last marked with a white peripherical band, scarcely descending anteriorly, convex beneath, compressed and white round the umbilicus, which is narrow and open ; aperture little oblique, lunate-roundish ; peristome simple, blunt, columellar margin rather thickened, reflected above into a moderate lamina. Height 32, greatest breadth 56, least breadth 49 mill. (*Pfr.*)

Helix distincta, *Pfr. in Z. f. M.* 1850, p. 69 ; *Ic.* n. 863. t. 134. f. 1, 2 ; *Mon. Suppl.* 81.
Reeve, n. 465. t. 86.

Hab. Moluccas.

122. NANINA CITRINA. B.M.

Shell perforate, conoidally depressed, rather solid, very faintly striated, smooth, shining, yellow, reddish, white, cinnamon-coloured or violaceous, with reddish-brown, white or black bands ; spire conoidal, rather blunt ; suture white-bordered ; whorls five, rather convex, enlarging regularly, the last rounded, scarcely more convex beneath ; aperture oblique, roundish-lunate ; peristome simple, upper margin descending immediately from the point of its insertion ; columellar margin declivous, nearly rectilinear. Height 22, greatest breadth 39, least breadth 33 mill. Breadth of the aperture to its height=10 : 9. (*Pfr.*)

Animal. — Mantle not produced behind. — *Voy. Astrol.* t. 2. f. 1, 2 = *Gray, Fig. Moll.* t. . f. .

Helix citrina, *Linn. Syst.* ed. 10. p. 771 ; ed. 12. n. 679. p. 1245.
Quoy & Gaim. t. 11. f. 1, 4.
Born, Mus. 377. t. 13. f. 14, 15 ; t. 15. f. 1–10.
Chemn. ix. pt. 2. 130. t. 131. f. 1167 1175.
Lam. 44. p. 77 ; ed. *Desh.* p. 45.

Helix citrina, *Fér. Pr.* 240; *Hist.* t. 71–73; *in Voy. de Freyc. Zool.* 471. t. 67. f. 2, 3.
Chemn. ed. 2, *Helix*, n. 181. t. 24. f. 1, 2?; t. 35. f. 1–5.
Pfr. Mon. Helic. i. 53, iii. 60; *Icon.* i. 212. t. 147. f. 11, 12, 13, 15.
Desh. l. c. 189. t. 88. f. 2.
Reeve, Conch. Icon. n. 482. t. 89; var. γ. t. 90. f. 485. f. *a*, *b*.
Helix variegata, *Humphr. Mus. Calonn.* (*Fér.*)
Nanina citrina, *Gray, Proc. Zool. Soc.* 1834, p. 59.
Nanina citrina et luctuosa, *Beck, Ind.* 3.
Nanina (Xesta) citrina, *Albers, Helic.* 58.
Vitrina citrina, *Quoy & Gaim. Astrol.* ii. 140. t. 11. f. 1–4 (and animal).
Zonites citrina, *Swains. Malac.* 331.
Seba, Mus. iii. t. 39. f. 1–10.
Pomatia succinea, ruteola, dimidiata, rutila, flaveola, citrina, paleacea, straminea, *Bolt.* 74. n. 953–960.
Hab. Moluccas.

123. NANINA TUMENS.

Shell perforate, turbinate-semiglobular, rather solid, slightly striated and (under a lens) obliquely decussated, diaphanous, shining, yellowish-white, with a single narrow reddish-brown band; spire flesh-coloured, conoidal, with convex outlines and a rather blunt apex; suture somewhat bordered above; whorls five and a half, moderately convex, the last rounded, not descending; aperture oblique, roundish-lunate, of equal height and breadth; peristome simple, straight, with the columellar margin callous, dilated above into a reflected triangular lamina. Height 26, greatest breadth 39, least breadth 34½ mill. (*Pfr.*)

Helix tumens, *Deshayes in Fér. Hist.* i. 188. n. 252. t. 89. f. 4.
Reeve, n. 477. t. 88.
Pfr. Mon. Suppl. 43.
Helix citrina, var., *Pfr. Ic.* t. 24. f. 1, 2?
Hab. Moluccas.

124. NANINA VITELLUS.

Shell narrowly perforate, conoidally semiglobular, rather solid, smooth, little shining, yellow, with a white line at the suture; spire conoidal, with the outlines convex and the apex rather pointed; whorls five, moderately convex, enlarging rapidly, the last rounded; aperture little oblique, roundish-lunate; peristome simple, straight, with the margins scarcely convergent, columellar

margin very shortly reflected above. Height 22, greatest breadth 35, least breadth 32 mill. (*Pfr.*)

Nanina vitellus, *Shuttleworth in Bern. Mittheil.* Aug. 1852, p. 194.
Helix vitellus, *Pfr. Ic.* n. 957. t. 145. f. 14; *Mon. Suppl.* 44.
Helix citrina, var., *Reeve, Conch. Icon.* t. 88. f. 478.

Hab. Amboina.

This may be considered as a variety of *N. citrina*.

125. Nanina Lennepiana.

Shell perforate, turbinate-globular, thin, marked with slight and crowded oblique striæ, diaphanous, painted with broader and smaller bands, which are alternately pale horn-coloured, translucent and white, rather opake; spire shortly conoidal, with the outlines convex, and the apex rather acuminate; suture deep, somewhat channeled; whorls five and a half, moderately convex, the last one large, ventricose, not descending anteriorly; aperture diagonal, lunate-rounded; peristome simple, straight, with the margins a little convergent, right margin slightly dilated in the middle, columellar margin reflected into a very small triangular lamina. Height 22, greatest breadth 32, least breadth 28½ mill. (*Pfr.*)

Helix Lennepiana, *Pfr. in Zeitschr. f. Malak.* 1852, p. 91; *Ic.* n. 1074. t. 158. f. 31, 32; *Mon. Suppl.* 44.

Locality unknown, probably from the Moluccas.

126. Nanina gypsacea.

Shell perforate, conoidal, rather solid, irregularly striated, a little shining, white, with two pale brownish bands around the periphery; spire conoidal, with the outlines convex and the apex rather pointed; whorls six and a half, slowly increasing, moderately convex, the last one not descending, obsoletely angular at the periphery, rather flattened beneath; aperture little oblique, broadly lunate; peristome simple, straight, with the columellar margin reflected into a small, convex lamina. Height 18, greatest breadth 30, least breadth 27 mill. (*Pfr.*)

Helix gypsacea, *Pfr. in Z. f. M.* 1850, p. 82; *Ic.* n. 878. t. 135. f. 22, 23; *Mon. Suppl.* 45.

Locality unknown.

j. *Borneo.*

127. Nanina conicoides.

Shell imperforate, conoidal, rather thin, slightly striate, keeled and marked with several obsoletely raised spiral lines near the

keel, rather shining, horn-coloured; spire conic, with concave outlines and the apex rather blunt; suture flat; whorls seven, flattened, slowly increasing, the last one not descending, showing a brown band on the compressed, sharp keel, rather convex beneath and impressed in the centre; aperture oblique, depressed-rhomboidal; peristome simple, straight, sharp, with the columellar margin a little thickened above. Height 8, greatest breadth 18, least breadth 16 mill. (*Pfr.*)

Helix conoicoides, *Metcalfe in Proc. Zool. Soc.* 1851, p. 71.
Reeve, n. 449. t. 84.
Pfr. Ic. n. 1020. t. 153. f. 20, 21; *Mon. Suppl.* 37.

Hab. Borneo.

128. Nanina Tais.

Shell imperforate, convex on both sides, keeled, rather thin, shining, horn-coloured yellowish or brownish horn-coloured, distinctly striated and very obsoletely decussated by spiral impressed lines; spire convex; apex blunt; suture impressed, bordered; whorls six, scarcely a little convex, increasing gradually, the last not descending, acutely keeled, convex beneath; aperture nearly perpendicular, quadrangular, somewhat callous within; peristome simple, straight, sharp, with parallel margins, right margin short, basal margin slightly arched, columellar margin entering, declivous, callous, dilated above. Height 7, greatest breadth 13, least breadth 12 mill. (*Pfr.*)

Helix Tais, *Hombron & Jacquinot, Voy. au Pol Sud, Moll.* t. 7. f. 42–45.
Pfr. Mon. Suppl. 37.
Helix Thais, *Pfr. in Z. f. M.* 1849, p. 68; *Ic.* n. 782. t. 125. f. 32, 33.
Reeve, n. 598. t. 107.
Helix tropidophora, *A. Adams & Reeve, Voy. Samarang, Moll.* 59. t. 14. f. 14.
Reeve, Conch. Icon. n. 581. t. 105, and var. t. 107. f. 601.

Hab. Marquesas Islands and Borneo.

129. Nanina Brookei.

Shell subperforate, reversed, solid, turbinate, keeled, with crowded striæ and minute granulations, undulated above by large, forward descending folds, shining, chestnut-coloured; spire subturbinate, rather pointed; whorls five, nearly flat, inflate below the suture, the last one rather obtusely carinate, ventricose, striate and minutely foveate, blackish beneath; aperture oblique, rather quadrangular, bluish-white inside; peristome simple, straight,

with the margins joined by a white callus, the columellar margin declivous, rather thickened, dilated and reflected over the perforation. Height 45, greatest breadth 76, least breadth 63 mill. (*Pfr.*)

Helix Brookei, *Adams & Reeve, V. Samarang, Moll.* 60. t. 15. f. 4.
Reeve, Conch. Icon. n. 377. t. 73.
Pfr. Ic. n. 870. t. 135. f. 1, 2; *Mon. Suppl.* 52.
Helix gigas, *Pfr. in Z. f. M.* 1850, p. 81.
Hab. Borneo.

130. NANINA REGALIS.

Shell perforate, reversed, conoidally depressed, keeled, with crowded undulate striæ and granulations, finely banded or uniform; spire conoidal, rather pointed; whorls six, nearly flat, slowly increasing, the middle ones obliquely undate, the last not descending, with a sharp keel, which is compressed from the lower side, shining, convex, very minutely decussated beneath, excavated in the centre, with the spiral striæ obsolete near the perforation; aperture oblique, rather securiform; peristome sharp, basal margin arched, situated towards the umbilicus, columellar margin very slightly reflected. Height 13, greatest breadth 27, least breadth 25 mill. (*Pfr.*)

Helix regalis, *Benson in Ann. & Mag. Nat. Hist.* March 1850, p. 215.
Pfr. Mon. Suppl. 52.

α. With the undulate ribs scarcely conspicuous; colour a dirty wine-red, with a whitish-green band, which is bordered with blackish-chestnut, on the suture and on the keel; periomphalum whitish-yellow, surrounded by a blackish band.

Helix vittata, *Adams & Reeve, Voy. Samarang, Moll.* 60. t. 15. f. 7 (not *Müll.*).
Helix regalis, *Reeve, Conch. Icon.* n. 529. t. 96.
Pfr. Ic. n. 915. t. 141. f. 5, 6.

β. Uniformly purplish-brown, with more distinct undulate ribs.

Helix regalis, var., *Reeve,* t. 80. f. 426.
Pfr. Ic. t. 141. f. 7, 8.

Hab. Sarawak and Balambangan, Borneo (*Taylor*).

131. NANINA GLUTINOSA.

Shell perforate, conoidally lenticular, keeled, thin, glutinous-shining, of a light chestnut-colour, marked with very minute spiral lines; spire conoidal, rather pointed; suture scarcely impressed, obscurely bordered; whorls six, rather flat, the last not

descending, girdled at its periphery with a compressed, rounded, darker-coloured keel, convex beneath; aperture oblique, lunate, angular; peristome simple, straight, sharp, columellar margin very shortly reflected above. Height 14½, greatest breadth 28, least breadth 24½ mill. (*Pfr.*)

Helix glutinosa, *Metcalfe in Proc. Zool. Soc.* 1851, p. 70.
Pfr. Mon. Suppl. 54.

Hab. Borneo.

132. Nanina Souleyetiana.

Shell perforated, conoidal, depressed, rather solid, with wrinkled striæ and with very crowded waving lines above between the striæ, pale fulvous; spire shortly conoidal, rather blunt; whorls six, rather flattened, increasing slowly, the last one sharply keeled, convex, and with a chestnut-coloured band below the keel, deeply excavated in the middle; aperture very oblique, lunate, angulated; peristome simple, with the margins nearly parallel, right margin forward, somewhat arcuate, columellar margin rather thickened, very shortly reflected above. Height 18, greatest breadth 12, least breadth 36 mill. (*Pfr.*)

Helix Souleyetiana, *Pfeiffer, Proc. Zool. Soc.* 1851; *Ic.* n. 950. t. 148. f. 16, 17; *Mon. Suppl.* 74.
Reeve, n. 378. t. 73.

Hab. ——?

133. Nanina Donovani.

Shell perforated, somewhat depressed, thin, keeled, striate, very minutely decussated above with oblique lines which are rather concentric beneath, scarcely shining, diaphanous, fulvous; spire very shortly conoidal, suture impressed; whorls five and a half, flat, rapidly increasing, the last one dilated, not descending anteriorly, rather flattened above, with one chestnut-coloured band on the keel, which is rather sharp, inflated below the keel and slightly excavated to the middle; aperture oblique, rhomboidally oval, pearly inside; peristome simple, sharp, with the columellar margin very declivous, reflected into a vaulted triangular lamina near the perforation, which is extremely narrow and not pervious. Height 21, greatest breadth 47, least breadth 37 mill. (*Pfr.*)

Helix Donovani, *Pfeiffer in Z. f. M.* 1851, 26; *Icon.* n. 967. t. 147. f. 8, 9; *Mon. Suppl.* 75.

Hab. Borneo.

This species has nearly the same sculpture as *N. Humphreysiana*; in shape it more resembles *N. stolephora*.

k. *New Guinea.*

134. Nanina Foullioyi.

Shell orbiculate-conoidal, umbilicated, fulvous-olive under the olivaceous epidermis, depressedly concave beneath, white; whorls five and a half, slightly depressed at the suture, finely cancellately-granulated, the lowest zoned in the middle with a white band, broadly bordered beneath with dark violet; umbilicus deep, contracted towards the outline; aperture oblique, semi-oblong, contracted behind and sinuated at the base; lip sharp, reflected at the umbilicus. Lat. 46, alt. 29 mill.

Helix Foullioyi, *Le Guillou in Revue Zool.* 1845, p. 187.
Pfr. Mon. Helic. ii. 44.

Hab. New Guinea; Triton Bay.

135. Nanina Baudini.

Shell orbiculate-convex, substriated, pale fulvous; whorls seven, very slightly convex, the last slightly keeled with white at the base; suture smooth; umbilicus very small; aperture nearly perpendicular, very small, obliquely semilunate; peristome simple, slightly thickened beneath. Lat. 22 mill.

Helix Baudini, *Desh. in Encycl. Méth.* ii. 256. n. 127.
Pfr. Mon. Helic. i. 55.
Nanina Baudini, *Beck, Ind.* 4.

Hab. New Guinea.

136. Nanina divisa. B.M.

Shell perforate, very much depressed, rather thin, obliquely striated above and obsoletely decussated with impressed lines, reddish-fulvid; spire little raised, with the apex blunt; suture bordered; whorls five, flat, the last one not descending, compressedly keeled at its periphery, convex, rather smooth and shining beneath; aperture oblique, lunate, angulated; peristome simple, straight, with the columellar margin shortly reflected above. Height 9½, greatest breadth 24, least breadth 21 mill. (*Pfr.*)

Helix divisa, *Forbes in Voy. of the Rattlesnake, App.* 376. t. 2. f. 5.
Pfr. Mon. Suppl. 77.

Hab. Louisiade Islands (*Macgillivray*).

l. *Islands of the Pacific.*

137. NANINA MACANDREWIANA.

Shell imperforate, conoidally globular, rather solid, decussated under a lens with striæ of growth and very crowded spiral lines, pale rose-coloured, surrounded with close-set blackish-brown lines; spire conoidal; apex red, blunt; suture moderate; whorls four, the upper ones moderately convex, the last inflated, scarcely descending anteriorly, uniformly rose-coloured at the base; aperture little oblique, roundish-lunate, dirty wine-red within; peristome simple, with distant margins, right margin sharp, columellar margin purplish, dilated above, reflected and affixed. Height 13, greatest breadth 17, least breadth 14 mill. (*Pfr.*)

Helix MacAndrewiana, *Pfr. in Z. f. M.* 1853, p. 53; *Mon. Suppl.* 625.

Hab. Great Savage Island (*MacAndrew*).

138. NANINA CALLIFERA.

Shell imperforate, depressed, thin, smooth, shining, pellucid, fulvous horn-coloured; spire slightly raised, rather convex; suture scarcely impressed; whorls five and a half, rather flat, enlarging gradually, the last subangular at its periphery, flattened beneath and white-spotted in the centre; aperture nearly perpendicular, transverse, angularly lunate; peristome simple, sharp, straight, columellar margin short, thickened into a dentiform callus, which is prolonged backwards. Height 3, greatest breadth 7, least breadth 6 mill. (*Pfr.*)

Helix callifera, *Pfr. in Z. f. M.* 1850, p. 68; *Ic.* n. 802. t. 127. f. 13–16; *Mon. Suppl.* 34.
Reeve, n. 634. t. 111.

Hab. Marquesas Islands.

139. NANINA SUCCINULATA.

Shell orbicular, convex-depressed, pale amber, very bright, pellucid; whorls five, depressed, the last scarcely keeled, convex beneath, depressed in the middle; spire obtuse; aperture oblique, semirotund, acute, scarcely angulated above, in front. Lat. 8, alt. 5½ mill.

Helix succinulata, *Le Guill. Revue Zool.* 1842, p. 138.
Pfr. Mon. Helic. i. 37.

Hab. Gouaham and Nonkahiva Islands.

140. Nanina pertenuis.

Shell minute, subglobose, pellucid, very bright, greenish-golden, imperforate; spire depressed; whorls four and a half, convex, the last ample, angular at the circumference, radiated with remote furrows beneath; aperture ample, lunate; lip simple. Lat. $\frac{1}{8}$, alt. $\frac{1}{10}$ poll.

Helix pertenuis, *Gould in Proc. Bost. Soc.* 1846, p. 172; *Exped. Shells,* 1851, p. 45. f. 60.
Pfr. Mon. i. 38. n. 59 *a*.

Hab. Aurora Island.

141. Nanina cicercula.

Shell depressedly globose, thin, rather opake, imperforate, whitish-green, sculptured with conspicuous lines of growth and scattered spiral striæ, beneath rounded, with a moderate central pit; whorls five, convex, the last angulated; aperture lunated; labrum simple; columella scarcely reflected above. Lat. $\frac{1}{4}$, alt. $\frac{3}{20}$ poll.

Helix cicercula, *Gould in Proc. Bost. Soc.* 1846, p. 171; *Exped. Sh.* 1851, p. 43. f. 73.
Pfr. Mon. i. 39. n. 61 *a*.

Hab. Hawaii Island.

142. Nanina subrutila.

Shell imperforate, orbicular, depressed, pellucid, glabrous, bright, lutescent, slightly keeled; whorls five, scarcely convex; aperture semilunar, rather gibbose; lip simple, thin. Diam. 0·3-0·4″.

Helix subrutila, *Mighels, Bost. Proc.* 1845, p. 19.
Pfr. Mon. Helic. i. 39.

Hab. Oahu Island.

143. Nanina rectangula.

Shell imperforate, orbicular-conic, solid, striatulate, greyish straw-coloured, basal area ornamented with a sutural line and broad chestnut bands; spire elevated, obtuse; whorls six to six and a half, slightly convex, the last almost rectangularly keeled, nearly level beneath, slightly excavated in the middle; aperture depressed, subtrapezial; columellar margin thickened, slightly one-toothed, with callus. Lat. maj. 13, min. 12, alt. 10 mill.

Helix rectangula, *Pfr. Proc. Zool. Soc.* 1845, p. 130.
Chemn. ed. 2, *Helix*, n. 217. t. 28. f. 8, 9.
Pfr. Mon. Helic. i. 35; *Ic.* i. 242.

Helix (Trochomorpha) rectangula, *Alb.* 116.
Helix hapa, *Hombr. & Jacq. Voy. Pol Sud, Moll.* t. 7. f. 38–41. *Reeve*, n. 615. t. 109.

Hab. The Marquesas.

144. Nanina Salomonis.

Shell orbiculate, depressed subconic, umbilicated, cancellated; whorls six, depressedly-convex, the last rounded, depressed beneath, plane; aperture oblique; lip sharp; inner lip very oblique, reflected above, nearly hiding the very small umbilicus. Lat. 18, alt. 13 mill.

Helix Salomonis, *Le Guillou in Revue Zool.* 1842, p. 137. *Pfr. Mon.* i. 47. n. 85.

Hab. Salomon Islands.

145. Nanina doliolum.

Shell perforated, turbinated, very closely and minutely costulate-striated, pellucid, not shining, horny; spire turbinated, apex rather obtuse; whorls five, slightly convex, the last nearly level beneath; aperture depressed, widely lunar; peristome quite simple, straight. Lat. maj. $3\frac{1}{2}$, min. $3\frac{1}{4}$, alt. $2\frac{1}{2}$ mill.

Helix doliolum, *Pfr. in Proc. Zool. Soc.* 1846, p. 41; *Mon. Helic.* i. 50.

Hab. Zebu Island.

146. Nanina concentrica.

Shell trochiform, subfulvous, pellucid, slightly umbilicated; whorls five, obsoletely striated transversely (with three remote striæ), the last keeled, depressedly-convex beneath; spire conic-depressed; aperture subovate, slightly angulated in front, margin acute; umbilicus very minute, obsolete. Lat. 7, alt. 6 mill.

Helix concentrica, *Le Guillou in Revue Zool.* 1842, p. 139. *Pfr. Mon. Helic.* i. 51.

Hab. Tonga Island.

147. Nanina Pacifica.

Shell perforated, subtrochiform, thin, pellucid, striatulate, horny; spire conoidal, rather acute; whorls six to six and a half, slightly convex, the last acutely keeled, a little more convex beneath, smooth, bright; aperture depressed, angulate-lunar; peristome simple, acute, columellar margin scarcely dilated, inserted into the punctiform perforation. Lat. maj. $5\frac{1}{3}$, min. 5, alt. 4 mill.

Helix pacifica, *Pfr. Symb.* iii. 66; *Mon. Helic.* i. 52; *Ic.* ii. 125. *Chemn.* ed. 2, *Helix*, n. 549. t. 88. f. 3–5.
Reeve, n. 640. t. 112.

Hab. Cocos Island, Pacific.

148. NANINA NOULETI.

Shell rounded, conic-depressed, umbilicated, chestnut, shining, elegantly striated longitudinally and obliquely, depressed beneath, brighter, nearly smooth; whorls five to six, depressedly-convex, transversely and very smoothly striolated above; spire chestnut, slightly exserted, obtuse; aperture oblique, lip acute, rather thickened below, whitish, hiding or partially covering the small umbilicus. Lat. 30, alt. 19 mill.

Helix Nouleti, *Le Guill. in Revue Zool.* 1842, p. 137.
Pfr. Mon. Helic. i. 69.
Reeve, n. 405. t. 77?

Hab. Viti Islands.

149. NANINA PUSILLA.

Shell minute, thin, depressed, obliquely striated above, whitish-green, more green beneath, slightly polished, perforated; spire of four whorls, nearly flat; suture deep; aperture circular; lip simple. Lon. $\frac{7}{40}$, lat. $\frac{5}{40}$ poll.

Helix pusillus, *Gould, Exped. Shells*, 1846, p. 19; 1851, p. 40.
Pfr. Mon. i. 97. n. 239 *a*.

Hab. Sandwich Islands.

150. NANINA TUMULUS.

Shell small, solid, yellowish, orbiculate-pyramidal, nearly level beneath, perforated by a moderate umbilicus; spire elevated, conic-rounded; whorls six to seven, slightly convex, furrowed with very oblique striæ, the last obtusely angled at the margin, compressed near the aperture; aperture small, transverse, lunate; peristome simple. Lon. $\frac{2}{5}$, alt. $\frac{7}{20}$ poll.

Helix tumulus, *Gould in Proc. Bost. Soc.* 1846, p. 175; *Exped. Shells*, 1851, p. 62. f. 53.
Pfr. Mon. i. 85. n. 204 *a*.

Hab. Feejee Islands.

151. NANINA LURIDA.

Shell globosely-conic, depressed, quite glabrous, bright, livid-chestnut, paler beneath, steep towards the minute umbilicus; whorls six, convex, radiately and obtusely striated, the last

slightly angulated near the aperture; suture impressed, margined; aperture lunate, throat livid; lip acute, reflected at the umbilicus, white. Lat. 1, alt. ½ poll.

Helix lurida, *Gould in Proc. Bost. Soc.* 1846, p. 179.
Pfr. Mon. i. 47. n. 83 *a*.
Nanina lurida, *Gould, Exped. Sh.* 1851, p. 31. f. 68.
Hab. Feejee Islands.

152. NANINA RUBRICATA. B.M.

Shell globosely-conic, solid, scarcely perforated, shining above, reddish-chestnut, with radiating striæ disposed in groups and decussated by spiral lines, quite glabrous beneath, livid-chestnut, sloping towards the centre; whorls six, convex, ample; suture slightly margined; aperture semilunar, throat dusky; lip simple, reflected at the columella, white. Lat. 1, alt. ⅗ poll.

Helix (Nanina) rubricata, *Gould in Proc. Bost. Soc.* 1846, p. 178; *Exped. Shells*, 25.
Pfr. Mon. Helic. i. 69.
Nanina rubricata, *Gould, Exped. Sh.* 1851, p. 29. f. 66.
Hab. Feejee Islands.

153. NANINA CALVA.

Shell thin, depressedly globose, bright, pale greenish straw-coloured, umbilicus contracted; whorls five, not turgid, lines of growth obsolete; suture not impressed, margined; aperture semilunar; lip simple, sharp, a little reflected at the umbilicus. Lat. ⅘, alt. ½ poll.

Helix calva, *Gould in Exped. Shells*, 1851, p. 31. f. 69.
Helix casca, *Gould in Proc. Bost. Soc.* 1846, p. 179.
Pfr. Mon. i. 41. n. 68 *a* (not *Lowe*).
Hab. Feejee Islands.

154. NANINA MODICELLA.

Shell minute, orbiculate depressed, very faintly striated, horn-coloured fulvous; whorls four and a half, moderately convex, separated by a channeled suture; umbilicus wide; aperture simple, roundish-semilunate. Height 1½, breadth 3 mill. (*Desh.*)

Helix modicella, *Fér. Mus.*; *Desh. in Fér. Hist.* i. 90. n. 123. t. 86. f. 3.
Pfr. Mon. Suppl. 92.
Hab. Tahiti.

155. Nanina minutalis.

Shell very minute, orbiculate depressed, white, glassy, faintly striated; whorls four and a half, moderately convex, narrow; umbilicus broad; aperture rounded-semilunate, oblique, simple, with sharp margins. Height 1, breadth 2 mill. (*Desh.*)

Helix minutalis, *Fér. Mus.*; *Desh. in Fér. Hist.* i. 83. n. 110 (not figured).
Pfr. Mon. Suppl. 91 (compare *Z. f. M.* 1852, p. 152).

Hab. Tahiti (*Desh.*)?

156. Nanina cultrata.

Shell small, orbicular, depressed, quite glabrous, shining, greenish-brown, rounded beneath, and bent into an umbilical pit, imperforate; spire of five convex whorls, the last keeled above; apex obtuse; suture margined; aperture narrow, lunate; lip simple; columella oblique, callous, white, plaulate, inflected, resembling a tooth below. Lat. $\frac{8}{10}$, alt. $\frac{1}{10}$ poll.

Helix cultrata, *Gould in Proc. Bost. Soc.* 1846, p. 172; *Exped. Shells*, 1851, p. 46. f. 59.
Pfr. Mon. Helic. i. 37. n. 55 *a*.

Hab. Tahiti and Eimeo.

157. Nanina radians.

Shell imperforate, depressed, thin, smooth, very shining, pellucid, horn-coloured, irregularly radiated with whitish stripes; spire scarcely raised, convex; suture impressed, a little marginate; whorls four and a half, nearly flat, the last one not descending, angular at its upper periphery, convex beneath and a little impressed in the centre; aperture nearly perpendicular, lunate, angular; peristome quite simple, straight, sharp. Height 4, greatest breadth 9, least breadth 8 mill. (*Pfr.*)

Helix radians, *Pfr. in Proc. Zool. Soc.* 1851, p. ; *Ic.* n. 942. t. 144. f. 22, 23; *Mon. Suppl.* 39.
Reeve, n. 618. t. 110.

Hab. Island of Tahiti.

158. Nanina calculosa.

Shell small, glassy, fragile, shining, smooth, horn-coloured, globose-pyramidal; whorls four, moderately convex, the last angular and slightly keeled at its periphery, convex beneath, impressed in the umbilical region, but imperforate; aperture lunate;

lip simple, with the internal margin rounded. Breadth $\frac{1}{10}$th of an inch, axis a little less (*Gould*).

Helix calculosa, *Gould, Exped. Sh.* 1851, p. 48. f. 63.
Pfr. Mon. Suppl. 41.

Hab. Tahiti.

159. Nanina Stoddarti. B.M.

Shell imperforate, depressedly turbinate, solid, slightly rugose, nitidulous, brunneous and pale banded, or yellowish with darker bands; spire depressedly conic; whorls five, nearly level, the last more convex, angular in the middle, slightly convex at the base; columella very short, slightly thickened, entering; aperture lunar; peristome simple, acute. Lat. maj. 15, min. 14, alt. 10 mill.

Helix Stoddarti, *Gray, Proc. Zool. Soc.* 1834, p. 65.
Müller, Synops. p. 8.
Pfr. Mon. Helic. i. 36.

Hab. Phillip Island, Pacific.

160. Nanina Campbellii. B.M.

Shell imperforate, orbiculate, convex on each side, closely wrinkled above, slightly decussated with spiral striæ, pale brunneous, ornamented above the margin with one broad pale band; spire conoidal, obtuse; whorls four and a half, nearly level, the last angulated in the middle, nearly smooth beneath; columella short, oblique, slightly thickened; aperture angularly-lunar; peristome thin, acute. Lat. maj. 19, min. 17, alt. 12 mill.

Helix Campbellii, *Gray, Proc. Zool. Soc.* 1834, p. 65.
Müller, Syn. p. 7.
Pfr. Mon. Helic. i. 35.

Hab. Phillip Island, Pacific.

161. Nanina exæquata.

Shell imperforate, discoidal, thin, smooth, shining, pellucid, reddish-brown horn-coloured; spire flat; suture scarcely impressed, bordered; whorls six, flat, enlarging slowly, the last obtusely angular at its upper periphery, rather flat beneath and impressed in the centre; aperture perpendicular, narrowly lunate; peristome simple, sharp, with the basal margin almost rectilinear. Height 3, greatest breadth 7, least breadth 6 mill. (*Pfr.*)

Helix exæquata, *Gould in Proc. Bost. Soc.* 1846, p. 171 ; *Exped. Sh.* 1851, p. 47. f. 67.
Pfr. Mon. Helic. i. 193. n. 498 *a*; *Ic.* n. 801. t. 127. f. 21–23 ; *Mon. Suppl.* 35.
Reeve, n. 627. t. 111.
Helix disculus, *Pfr. in Z. f. M.* 1850, p. 88 (not *Deshayes*).
Helix obtusangula, *Pfr. in Z. f. M.* 1850, p. 153.
Hab. Kanai, Sandwich Islands.

162. NANINA AURULENTA.

Shell imperforate, depressed, thin, indistinctly and faintly striated, shining, diaphanous, whitish, with a single brownish-yellow band above the middle; spire short, rather conoidal; whorls four, moderately convex, enlarging gradually, the last rounded, not descending; aperture little oblique, roundish-lunate; peristome simple, sharp; columellar margin ascending in an arch. Height 5, greatest breadth 9, least breadth 8 mill. (*Pfr.*)

Microcystis aurulenta, *Beck*, *MSS.*
Mörch, Cat. Yold. p. 2. n. 29.
Helix aurulenta, *Pfr. Mon. Suppl.* 626.
Hab. Pitcairn Islands.

163. NANINA NOVÆ HIBERNIÆ. B.M.

Shell perforated, globosely-depressed, keeled, obliquely rugulosely striated, thin, fulvescent, zoned with a rufous line at the keel; whorls six, very slightly convex, the last more convex beneath, nearly smooth, obsoletely decussated with concentric lines; aperture lunar, inside bright, concolorous; peristome straight, obtuse, columellar margin slightly thickened. Lat. maj. 19, min. 17, alt. 10 mill.

Helix Novæ Hiberniæ, *Quoy & Gaim. Astrol.* ii. 124. t. 10. f. 14–17.
Lam. ed. Desh. 193. p. 120.
Chemn. ed. 2, *Helix*, n. 548. t. 88. f. 1, 2.
Pfr. Mon. Helic. i. 79.
Nanina Novæ Hollandiæ, *Beck, Ind.* 4.
Pfr. Ic. ii. 124.
Reeve, n. 429. t. 81.
Nanina (Hemiplecta) Novæ Hiberniæ, *Alb.* 60.
Hab. Port Carteret, New Ireland.

164. Nanina Adamsi. B.M.

Shell imperforate, orbicular, faintly striated, opake, very polished, fulvous-yellow or yellowish-white, uniform or multifariously variegated and rayed with dark fulvous and chestnut-coloured lines and bands; spire short, rather convex; apex blunt; whorls three and a half, scarcely convex, the last depressed, rather flattened beneath; aperture roundish-lunate; peristome simple, sharp; columellar margin rather oblique, dilated, white. Height 6, greatest breadth 11, least breadth 10 mill. (*Pfr.*)

Helix Adamsi, *Pfr. in Proc. Zool. Soc.* 1845, p. 66; *Ic.* t. 129. f. 1–6; *Mon. Suppl.* 33.
Helix ornatella, *Pfr. Ic.* i. 234. t. 29. f. 23–26; *Mon.* i. 32. n. 42 (part.).
Desh. Hist. Helic. p. 165. n. 220. t. 99. f. 9–14.
Reeve, t. 107. f. 596 *a*.
Microcystis filiceti, *Beck, Ind.* 2. n. 5.
Nanina (Microcystis) filiceti, *Beck in M. R. C.* viii. t. 3. f. 4 *a–d*.
Nanina (Microcystis) Adamsi, *Alb.* 60.
Hab. Pitcairn Islands and Opara (*H. Cuming*).

165. Nanina brunnea.

Shell imperforate, orbicular-convex, very bright, deeply fulvous, sprinkled above with white dots; spire slightly convex; whorls four and a half, subplanulate, increasing gradually, the last slightly convex beneath, impressed in the middle; aperture rounded-lunar; peristome acute, simple, very thin, slightly thickened in the place of the umbilicus. Lat. maj. 6, min. $5\frac{1}{2}$, alt. $3\frac{1}{3}$ mill.

Helix brunnea, *Anton, Verz.* p. 35. n. 1328.
Chemn. ed. 2, *Helix*, n. 208. t. 29. f. 27–29.
Pfr. Mon. Helic. i. 33; *Ic.* i. 235.
Reeve, n. 628. t. 111.
Nanina (Microcystis) brunnea, *Alb.* 60.
Helicopsis glandula, *Beck, Ind.* 2 (*Anton*).
Microcystis aurulenta, *Beck, MSS.*
Mörch, Cat. Yold. 2. n. 29.
Helix aurulenta, *Pfeiffer, Supp.* n. 1591.
Microcystis margarita, *Beck, MSS.*
Mörch, Cat. Yold. 2. n. 30.
Helix margarita, *Pfeiffer, Supp.* iii.
Hab. Pitcairn Island.

166. Nanina ornatella.

Shell imperforate, orbiculate-convex, thin, keeled, smooth, very shining, pellucid, pale or darker yellow or fulvous, uniform or marked with a single reddish-brown band, rarely purple-red beneath; spire obtusely conoidal; whorls four and a half, moderately convex, the last keeled, more convex beneath; aperture little oblique, lunate, slightly angular; peristome simple, sharp, straight, with the columellar margin somewhat callous, entering. Height 7, greatest breadth 11½, least breadth 10½ mill. (*Pfr.*)

Microcystis ornatella, *Beck*, *Index*, 2. n. 4.
Nanina (Microcystis) ornatella, *Beck in M. R. C.* viii. t. 3. f. *a–h*.
Alb. Helic. 59.
Helix ornatella, *Pfr. Symb.* ii. 36; *Mon.* i. 32 (part.); *Suppl.* 38; *Ic.* n. 815. t. 129. f. 7–10.
Reeve, t. 107. f. 596 *b*.
Helix realis, *Mühlf. in Anton*, *Verz.* 35. n. 1329.

β. ? More depressed, uniformly greenish-yellow.

Microcystis amœnula, *Beck*, *Ind.* 2. n. 6.
Nanina (Microcystis) amœnula, *Beck in M. R. C.* viii. t. 3. f. 5 *a–d*.

Hab. Pitcairn Islands (*H. Cuming*) and Opara?

This species, which has often been confounded with *N. Adamsi*, Pfr., may be distinguished from that shell by the number of its whorls, the last of which is keeled to the peristome, by its pellucidity and the more convex base.

167. Nanina orbis.

Shell imperforate, discoidal, greenish-yellow, very glabrous, bright, pellucid, smooth above, slightly convex beneath, impressed in the middle; suture slightly margined; whorls five to six, level, the last but one rather wider, angulated above; aperture nearly vertical, wide, lunar; peristome straight, acute, simple. Lat. maj. 9⅓, min. 8⅔, alt. 3½.

Helicopsis orbis, *Beck*, *Ind.* 2 (*Anton*).
Helix orbis, *Pfr. Symb.* ii. 35; *Mon. Helic.* i. 32; *Ic.* i. 234.
Reeve, n. 623. t. 10.
Chemn. ed. 2, *Helix*, n. 206. t. 30. f. 8–10.
Helix planulata, *Anton*, *Verz.* p. 35. n. 1326 (not *Lam.*).
Nanina (Microcystis) orbis, *Alb.* 59.

Hab. Opara.

168. Nanina subtilis.

Shell imperforate, depressed, very thin, bright, pale horny; spire scarcely exserted; whorls four and a half to five, nearly level, gradually increasing, the last a little more convex at the base; suture sometimes red-margined; aperture transversely lunar; peristome simple, acute. Lat. maj. 6, min. 5¼, alt. 3⅓ mill.

Helix subtilis, *Anton, Verz.* 35. n. 1327.
Chemn. ed. 2, *Helix*, n. 209. t. 29. f. 33–35.
Pfr. Mon. Helic. i. 33; *Ic.* i. 236.
Reeve, n. 626. t. 111.
Helix vitrinella, *Pfr. Symb.* ii. 41.
Helicopsis vitrinella, *Beck, Ind.* 2 (*Anton*).
Nanina (Microcystis) subtilis, *Alb.* 60.
Hab. Oheatora Island.

169. Nanina spiralis.

Shell orbiculate, subconoidal, umbilicated, luteous, sculptured with numerous radiating striæ, sometimes obsolete; spire obtuse; whorls five, depressedly-convex, the lowest ornamented with a decurrent purplish-black band above the middle; umbilicus very narrow, deep; aperture semiovate; lip acute, scarcely reflected at the umbilicus. Lat. 34, alt. 20 mill.

Helix spiralis, *Le Guill. Revue Zool.* 1845, p. 188.
Pfr. Mon. Helic. i. 53.
Reeve, n. 408. t. 77?
Hab. Arrow Island.

m. *New Zealand.*

170. Nanina Mariæ. B.M.

Shell imperforate, nearly lenticular, rather thin, slightly striate, shining, greenish horn-coloured, indistinctly marked with narrow oblique brownish stripes; spire conoidal, with the outlines convex and the apex acuminate; suture bordered; whorls five and a half, rather flat, acutely carinate, the last one not descending, rather convex beneath and obsoletely spotted with brown; aperture oblique, depressed, nearly triangular; peristome simple, sharp, straight, with the basal margin very slightly arcuate and shortly reflected at the columella. Height 3⅔, greatest breadth 7½, least breadth 7 mill. (*Pfr.*)

Nanina Mariæ, *Gray in Dieffenb. Trav.* i. 262.
Helix Mariæ, *Pfr. Mon.* i. 81. n. 192; *Ic.* n. 1045. t. 155. f. 40–42; *Mon. Suppl.* 39.
Reeve, n. 804. t. 131.
Helix umbraculum, *Pfr. in Proc. Zool. Soc.* 1851.
Hab. New Zealand.

n. *African.*

171. Nanina Sowerbyana.

Shell subperforated, depressed, solid, slightly shining, subdecussated with close concentric striæ and distinct lines of growth, olivaceous-lutescent; spire depressed; whorls four and a half, nearly level, rapidly increasing, the last depressed, dilated in front, deeply excavated beneath around the obsolete perforation; aperture very oblique, lunate-oval, milky inside; peristome slightly thickened, margins united by a very thin callus, the upper arched forwards, the columellar slightly reflected, subdentate. Lat. maj. 52, min. 44, alt. 25 mill.

Helix Sowerbyana, *Pfr. Symb.* i. 36.
Phil. Icon. i. 2. p. 21. t. 2. f. 1.
Chemn. ed. 2, *Helix*, n. 157. t. 25. f. 5, 6.
Pfr. Mon. Helic. i. 68; *Ic.* i. 192.
Reeve, n. 386. t. 74.
Nanina (Ryssota) Sowerbyana, *Alb.* 61.
Helix pachistoma, *Hombr. & Jacq. Voy. Pol Sud, Moll.* t. 3. f. 10–12.

Hab. Canaries.

172. Nanina Grateloupi.

Shell slightly perforated, semiglobose, slightly shining, regularly and closely striated above, irregularly decussated with spiral lines, dull chestnut, smooth beneath; whorls six, slightly convex, the last nearly level beneath; suture slightly margined; aperture lunar, concolorous inside; peristome simple, acute, dextral margin sinuous, columellar callous, a little reflected. Lat. maj. 26½, min. 24, alt. 15 mill.

Helix Grateloupi, *Pfr. Symb.* ii. 99; *Mon. Helic.* i. 69; *Ic.* i. 205.
Chemn. ed. 2, *Helix*, n. 173. t. 31. f. 13, 14.
Helix rufescens, *Grat. Act. Bord.* xi. 408. t. 1. f. 3?
Nanina (Xesta) Grateloupi, *Alb.* 59.

Hab. Madagascar?

173. Nanina rufa. B.M.

Shell perforated, slightly depressed, thin, closely striated, slightly decussated with obsolete, concentric lines, horny-red; spire scarcely elevated; whorls six, very little convex, the last dilated, more convex beneath, angulated above the middle; angle evanescent in front; aperture nearly vertical, lunar; peristome simple, obtuse, columellar margin very slightly reflected. Lat. maj. 19, min. 17, alt. 10 mill.

Helix rufa, *Less. Voy. de la Coq.* 305. t. 13. f. 2.
Chemn. ed. 2, *Helix*, n. 540. t. 87. f. 4, 5.
Pfr. Mon. Helic. i. 73.
Reeve, n. 193. t. 42.
Nanina (Hemiplecta) rufa, *Alb.* 60.
Nanina exilis, var., *Beck, Ind.* 4.
Hab. Mauritius. New Ireland?

174. NANINA CALAMECHROA.

Shell perforated, globosely-depressed, thin, bright, pellucid, straw-coloured, regularly striated transversely, decussated by very fine spiral lines, scarcely visible with the naked eye; whorls five and a half, increasing gradually; aperture lunar; peristome simple, acute. Lat. maj. 17, min. 15½, alt. 8 mill.

Helix calamechroa, *Jonas in Phil. Icon.* i. 3. 47. t. 3. f. 2.
Pfr. Mon. Helic. i. 57; *Ic.* n. 816. t. 129. f. 11, 12.
Helix tenera, *Jonas*, olim.
Nanina (Xesta) calamechroa, *Alb.* 59.
Macrochlamys, *Mörch, Cat. Yold.* 2.
Hab. Guinea.

Habitat unknown.

175. NANINA LITURATA.

Shell imperforate, turbinate-semiglobular, rather solid, striated and minutely wrinkled, rather shining, reddish with brownish bands, which are broken into single points or letter-like stripes; spire depressedly turbinate; apex rather pointed; whorls five, moderately convex, the last one descending imperceptibly, rounded and marked with a chestnut-coloured peripherical band, which is divided into regular square spots, rather convex beneath; aperture diagonal, roundish-lunate; peristome simple, with the right margin imperceptibly expanded and the columellar one a little callous. Height 15, greatest breadth 23, least breadth 20 mill. (*Pfr.*)

Helix liturata, *Pfr. in Proc. Zool. Soc.* 1851, p. ; *Ic.* n. 931. t. 142. f. 13, 14; *Mon. Suppl.* 31.
Locality unknown.

176. NANINA INSCULPTA.

Shell imperforate, depressed, slightly convex on each side, lenticular, sharply keeled, rather solid, chestnut, sculptured above with close-set ribs and with a spiral line parallel to the keel; whorls five, planulate, the last smooth beneath, marked with an impressed line near the keel; columella armed with a single,

short, acute, white tooth; aperture depressed, hatchet-shaped; peristome simple, acute. Lat. maj. 8, min. 7½, alt. 4 mill.

Helix insculpta, *Pfr. Proc. Zool. Soc.* 1845, p. 129; *Mon. Helic.* i. 36; *Ic.* i. 243.
Chemn. ed. 2, *Helix*, n. 219. t. 30. f. 15–18.
Helix (Trochomorpha) insculpta, *Alb.* 116.
Hab. ——?

177. NANINA CRYPTOPORTICA.

Shell small, orbicular-depressed; apex pointed, thin, pellucid, bright, yellowish-green, faintly striated, rounded beneath, imperforate, with a small central pit; whorls five and a half, slightly convex, the last keeled; suture impressed, margined; aperture lunate; lip simple; columella strongly twisted above, forming a narrow, central sinus.

Helix cryptoportica, *Gould, Proc. Bost. Soc.* 1846, p. 171; *Exped. Shells*, 1851, p. 44. f. 72.
Pfr. Mon. Helic. i. 39.
Hab. ——?

178. NANINA AMMONIA.

Shell reversed, nearly globular, longitudinally folded, thin, fragile, pellucid, green; spire short, acuminate; whorls four, narrow, convex, the last one the largest, dilated, convex and perforate beneath; aperture large, oval-rounded, oblique; peristome thin, sharp, dilated at the base. Height 18, breadth 20 mill. (*Desh.*)

Helix Ammonia, *Valenc. in Mus. Paris.*
Desh. in Fér. Hist. i. 197. n. 265. t. 37 A. f. 1.
Pfr. Mon. Suppl. 41.
Locality unknown.

179. NANINA RUBICUNDA.

Shell perforated, depressedly turbinated, rugosely striated, obsoletely and very minutely granulated, reddish under the deciduous horny epidermis; whorls five and a half, subplanulate, the last obsoletely angulated in the middle, more convex beneath; aperture obliquely lunar; peristome simple, straight, dextral margin dilated in front, columellar dilated, reflected, half-hiding the perforation. Lat. maj. 27, min. 21, alt. 15 mill.

Helix rubicunda, *Pfr. in Proc. Zool. Soc.* 1845, p. 72; *Mon. Helic.* i. 47.
Hab. ——?

180. Nanina Moussoni.

Shell perforate, turbinate, thin, light, keeled, very minutely decussated by the striæ of growth and very crowded impressed lines, which descend obliquely forwards, diaphanous, whitish, with a single red band; spire conoidal; apex rather blunt; suture slightly bordered; whorls six, nearly flat, the last large, keeled below the band, rounded anteriorly, rather convex beneath; aperture oblique, lunate, obsoletely angular; peristome simple, straight, columellar margin slightly reflected upon the perforation. Height 23, greatest breadth 38, least breadth 33 mill. (*Pfr.*)

Helix Moussoni, *Pfr. in Proc. Zool. Soc.* 1849, p. 126; *Ic.* n. 783. t. 125. f. 34, 35; *Mon. Suppl.* 53.
Reeve, n. 479. t. 88.

Locality unknown.

181. Nanina Eucharis.

Shell orbiculate, subdiscoidal, thin, pellucid, greenish, granulated above, smooth beneath; spire conoidal, pointed; whorls six, narrow, rather flattened, joined by a very minutely crenulated suture; last whorl thickened, with a narrow keel at its periphery, convex and perforate beneath; aperture large, lunate, rather triangular, oblique; peristome simple, sharp. Height 20; breadth 28 mill. (*Desh.*)

Helix Eucharis, *Deshayes in Fér. Hist.* i. 363. n. 430. t. 64 A. f. 7, 8.
Pfr. Mon. Suppl. 54.

Locality unknown.

182. Nanina scalprum.

Shell orbiculate-discoid, thin, pellucid, pale brownish horn-coloured, minutely striated; spire depressed; apex acuminate; whorls five, narrow, rather flat, joined, the last depressed, sharply keeled at its periphery, rather convex and perforate beneath; aperture depressed, rather triangular, oblique; peristome simple, sharp; columella with a single small tooth. Height 9, breadth 16 mill. (*Desh.*)

Helix scalprum, *Valenc. in Mus. Paris.*
Desh. in Fér. Hist. i. 362. n. 429. t. 64 A. f. 2–4.
Pfr. Mon. Suppl. 57.

Locality unknown.

183. NANINA SECURIFORMIS.

Shell orbiculate-subglobose, thin, lucid, greenish, smooth, sharply angulate at the periphery; spire broad, conoidal, with the apex acuminate; whorls four and a half, moderately convex, rapidly increasing, the last one large, ventricose, convex and subperforate beneath; aperture rounded-triangular, large; peristome simple, thin, not reflected. Height 6, breadth 10 mill. (*Desh.*)

Helix securiformis, *Desh. in Fér. Hist.* i. 362. n. 428. t. 64 A. f. 5, 6. *Pfr. Mon. Suppl.* 57.

Locality unknown.

184. NANINA ZONITES.

Shell umbilicated, depressed, thin, diaphanous, closely costulate-striated, yellowish-horny; spire scarcely elate; whorls six, slightly convex, regularly increasing, the last ornamented with a rufous line above the middle, conspicuous even to the apex, base smoother, subplanulate; umbilicus moderate, pervious; aperture depressed, obliquely lunate-oval, iridescent inside; peristome simple, straight, columellar margin spreading a little. Lat. maj. 25, min. 20, alt. 12½ mill.

Helix zonites, *Pfr. Proc. Zool. Soc.* 1845, p. 127; *Mon. Helic.* i. 99. *Reeve*, n. 615. t. 109.

Hab. ——?

185. NANINA SEMIPARTITA.

Shell perforate, orbicularly discoidal, rather convex above and beneath, white, pale yellowish, with a narrow brown band at the periphery; spire very short, blunt; whorls five, rather flattened, striate and decussated above, last whorl depressed, convex at its periphery; umbilicus very narrow, deep; aperture oblique, ovate-semilunar, rather transverse; peristome simple, blunt, with the basal margin dilated. Height 15, breadth 26 mill. (*Desh.*)

Helix semipartita, *Desh. in Fér. Hist.* i. 187. n. 241. t. 89. f. 5. *Pfr. Mon. Suppl.* 71.

Locality unknown.

186. NANINA INDUTA.

Shell perforated, lenticular, acutely keeled, solid, closely plaited-striate above, decussated with close, concentric lines, striated beneath, chestnut, paler beneath, with a chestnut areola round the perforation, clothed entirely with a very thin horny-grey epidermis; whorls five, plane, increasing gradually; aperture subrhombic; peristome simple, columellar margin very slightly reflected. Lat. maj. 21, min. 18, alt. 11 mill.

Helix induta, *Pfr. Proc. Zool. Soc.* 1845, p. 128; *Mon. Helic.* i. 79.
Hab. ——?

187. NANINA ATOMATA.

Shell orbiculate, slightly convex, beneath convex, perforated, striated, whitish, stained with brown; lowest whorl keeled, with unequal black-brown spots on the upper surface; aperture semi-ovate-squarish. Alt. $1\frac{1}{3}$, lat. $2\frac{1}{2}$ lin.

Carocolla atomata, *Menke, Synops.* p. 76; ed. 2. p. 128.
Helix atomata, *Pfr. Mon. Helic.* i. 82; *Ic.* n. 760. t. 123. f. 19–21.
Helix cheiranthicola, *Lowe* ? (*Beck*).
Hab. ——?

188. NANINA VARIOLOSA.

Shell perforated, depressed, acutely keeled, rather solid, opake, lutescent, very closely plaited above, and regularly decussated with concentric lines, covered subfasciately with white pustules; spire nearly level; whorls three and a half, very slightly convex, rapidly increasing, the last convex beneath, impressed below the keel; columella short, vertical; aperture widely hatchet-shaped; peristome simple, acute, columellar margin slightly reflected, nearly hiding the perforation. Lat. maj. 23, min. 20, alt. 10 mill.

Helix variolosa, *Pfr. Proc. Zool. Soc.* 1845, p. 128; *Mon. Helic.* i. 83; *Ic.* n. 1064. t. 157. f. 7, 8.
Hab. ——?

189. NANINA PROBLEMATICA.

Shell convex-depressed, thin, faintly striated, shining, pellucid, pale gold-yellow; spire convex, with the apex rather prominent, blunt; suture slightly bordered; whorls four and a half, moderately convex, enlarging rapidly, the last not descending, slightly angled below the middle, rather flat beneath; umbilicus middle-sized, conic; aperture oblique, rather trapezoidal; peristome simple, straight, columellar margin shortly expanded, sometimes perfectly covering the umbilicus by a dilated lamina. Height 4, greatest breadth 8, least breadth $6\frac{1}{2}$ mill. (*Pfr.*)

Helix problematica, *Pfr. in Z. f. M.* 1852, p. 91; *Ic.* n. 1062. t. 157. f. 3, 4; *Mon. Suppl.* 87.

Locality unknown.

It is not certain that this singular shell is a full-grown form of Helix; perhaps it may be the young state of some other genus.

11. STENOPUS.

Shell perforated, conical or depressed, thin, diaphanous; whorls five to six, last much broader; aperture roundish lunate; peristome simple, acute, pillar-edge entering.

Animal corrugate, elongate, rarely retracted; walks with great difficulty, with a serpentine motion; mantle scarcely produced beyond the edge of the shell; upper tentacles elongate; mouth between lower tentacles; lips plicate; penis cervical, elongate; foot linear, tail with subcontractile tentacles, with a gland at the base.—*Guilding.*

Stenopus, *Guilding, Zool. Journ.* 1828, ii. 527.
Albers, Heliceen, 57.
Gray, Proc. Zool. Soc. 1847, 169.

1. STENOPUS CRUENTATA. B.M.

Shell openly perforated, depressed, transversely plicatulate, horny-amber; spire nearly level; whorls five, very slightly convex, the last much wider, impressed round the perforation; suture margined; aperture rounded-lunar; peristome simple, acute, columellar margin entering. Lat. maj. 8½, min. 7¾, alt. 4½ mill.

Stenopus cruentatus, *Guild. in Zool. Journ.* iii. 527. t. 15. f. 1–5.
Swains. Malac. 190. f. 33.
Sow. Man. Con. f. 515.
Albers, Heliceen, 57.
Gray, Fig. Moll. iv. 111. t. 72. f. 2, 4; t. 288. f. 4.
Helix cruentata, *Pfr. Mon. Helic.* i. 65; iii. 68.

Hab. St. Vincents.

2. STENOPUS LIVIDA. B.M.

Shell perforated, conic, thin, striatulate, brown horn-colour, diaphanous; spire conic, rather obtuse; whorls six, slightly convex, the last ventricose beneath, keeled above the middle; aperture rounded-lunar; peristome simple, acute, straight. Lat. maj. 4⅓ min. 4, alt. 3½ mill.

Stenopus lividus, *Guild. in Zool. Journ.* iii. 528. t. ; *Suppl.* 27. f. 1–3.
Sow. Conch. Man. f. 516.
Albers, Heliceen, 57.
Gray, Fig. Moll. iv. 111. t. 288. f. 5.
Helix livida, *Pfr. Mon. Helic.* i. 52; iii. 58.

Hab. St. Vincents.

12. ARIOPHANTA.

Shell sinistral, umbilicated, thin, diaphanous, last whorl angular or keeled; aperture oblique, lunate; peristome simple, acute, pillar-edge reflexed.

"Edge of mantle of animal not produced."

Ariophanta (lævipes), *Desmoulins, Act. Soc. Linn. Bord.* iii. 227, 1833.
Beck, Index, 5.
Albers, Heliceen, 62.
Nanina (lævipes), *Gray*; *Beck*.

1. ARIOPHANTA LÆVIPES. B.M.

Shell sinistral, perforate, rather depressed, thin, keeled, with distinct striæ of growth, decussated under the lens by several spiral lines, pale horn-coloured, with one brown peripherical band, which sometimes is bordered with a white one; whorls four and a half, rather flattened, the last one not descending, inflated beneath; aperture oblique, lunate, rather angulated; peristome simple, straight, with the margins convergent, columellar margin ascending nearly perpendicularly, somewhat reflected. Height 14½, greatest breadth 28, least breadth 23 mill. (*Pfr.*)

Helix lævipes, *Müll., Pfr. Mon.* i. 71. n. 162 (excluding the var. δ); *Mon. Suppl.* 75; *Mon. Helic.* i. 71.
Desh. Helic. p. 177. n. 238.
Reeve, n. 397. t. 76.
Müll. Verm. ii. 22. n. 222.
Chemn. ix. pt. 1. p. 83; ed. 2. *Helix*, n. 523. t. 84. f. 22, 23.
(Helicella) *Fér. Pr.* 229; *Hist.* t. 92. f. 3–6.
Helix candida, *Gmel.* 15? (*Beck*).
Ariophanta lævipes, *Desmoulins, Bull. Bord.* iii. 227. t. 1. f. 1–5.
Fér. in Bull. Zool. 1835, p. 108.
Gray, Fig. Moll. t. 288. f. 6, 7.
Beck, Ind. 5.
Vitrina lævipes, *Ant. Verz.* p. 33. n. 1264.
Nanina (Ariophanta) lævipes, *Alb.* 62.
Pfr. Symb. ii. 63.
Favanne, t. 63. f. L. 3.
β. Helix lævipes, *Chemn.* ix. t. 108. f. 915, 916.
var., *Fér.* t. 92. f. 6.
γ. Helix spadicea, *Gmel.* 16.
Kämmerer, p. 172. t. 11. f. 2.

δ. Helix trifasciata, *Chemn.* ii. 308. t. 213. f. 3018, 3019.
Helix lævipes, var., *Fér. Hist.* t. 92. f. 4.
Chemn. ed. 2, *Helix*, t. 84. f. 20, 21.
Ariophanta trifasciata, *Beck, Ind.* 5.

Hab. Malabar, Tranquebar.

2. Ariophanta trifasciata. B.M.

Shell sinistral, perforate, rather conoidally depressed, striate, decussated with crowded spiral lines, little shining, fulvous-whitish, with three chestnut-coloured bands, one of which runs along the suture, the second above, and the third below the periphery of the last whorl; spire rather conoidally raised; whorls five, scarcely convex, regularly increasing, the last one keeled, rather rounded anteriorly, deflected, convex beneath; aperture small, very oblique, regularly lunate; peristome simple, sharp, with the margins distant, columellar margin declivous, rather thickened, shortly reflected near the perforation. Height 14, greatest breadth 25½, least breadth 22 mill. (*Pfr.*)

Helix trifasciata, *Chemn. Conch. Cab.* xi. 308. t. 213. f. 3018, 3019.
Pfr. Ic. n. 523 *a*. t. 84. f. 20, 21; t. 136. f. 13; *Mon. Sup.* 76.
Helix lævipes, var., *Fér.* t. 92. f. 4.
Pfr. Mon. i. 72.
Ariophanta trifasciata, *Beck, Ind.* p. 5. n. 3.

Hab. Malabar, Tranquebar.

3. Ariophanta Bombayana.

Shell dextral, perforate, rather depressed, keeled, slightly striate and under the lens very minutely decussated above, scarcely diaphanous, brownish rose-coloured; whorls five, little convex, the last one not descending, rounded anteriorly, convex and pale beneath; aperture oblique, rounded-lunate; peristome simple, blunt, with the columellar margin shortly reflected above. Height 16, greatest breadth 28, least breadth 23 mill. (*Pfr.*)

Helix Bombayana, *Grat., Pfr. Mon.* i. 41. n. 68.
Desh. in Fér. p. 181. n. 242. t. 69 I. f. 5.
Pfr. Ic. n. 832. t. 130. f. 4, 5; *Mon. Suppl.* 76.
Helix rubescens, *Desh. MSS.*

Hab. From woods near Bombay.

4. Ariophanta Himalayana.

Shell narrowly umbilicated, sinistral, depressed, thin, pellucid, costulated above, pale fulvous; spire scarcely elevated; whorls

four and a half to five, nearly level, the last slightly keeled, brown-banded beneath the keel, tumid beneath ; aperture rounded-lunar ; peristome simple, acute, columellar margin slightly descending, reflected. Lat. maj. 30, min. 25, alt. 15 mill.

Helix Himalana, *Lea, Obs.* i. 167. t. 19. f. 66.
Helix Himalayana, *Benson in Zool. Journ.* v. (1835) 461.
Pfr. Mon. Helic. i. 63.
Reeve, Icon. n. 389. t. 75.
Ariophanta Himalayana, *Beck, Ind.* p. 5. n. 5.
Nanina (Ariophanta) Himalajana, *Alb. Helic.* 62.
Hab. Himalaya.

5. Ariophanta retrorsa.

Shell perforated, sinistral, somewhat lenticular, rather thin, with impressed subspiral lines and very fine wavy and confluent wrinkles, pale chestnut or yellow-brown ; spire scarcely elevated, apex rather acute ; whorls five and a half, rapidly increasing, very slightly convex, the last acutely keeled, gibbous beneath ; aperture rounded-lunar ; peristome simple, columellar margin not reflected. Lat. maj. 44, min. 35, alt. 20 mill.

Helix (Carocolla) retrorsa, *Gould, Bost. Journ.* iv. 455. t. 24. f. 4.
Helix retrorsa, *Pfr. Mon. Helic.* i. 76 ; iii. n. 284.
Chemn. ed. 2, *Helix*, n. 686. t. 110. f. 4–6.
Nanina retrorsa, *Troschel, Wiegm. Arch.* 1849, i. 234. t. 4. f. 6.
Nanina (Ariophanta) retrorsa, *Albers, Heliceen*, 62.
Hab. Birmah.

6. Ariophanta Janus. B.M.

Shell perforated, sinistral, orbicular, thin, diaphanous, obliquely regularly and closely costulate-striated, brown above, convex beneath, reddish-chestnut, rather bright ; spire widely conoidally-depressed ; whorls seven, planulate, the last keeled ; aperture lunar ; peristome thin, acute, columellar margin slightly reflected. Lat. maj. 36, min. 31, alt. 17 mill.

Helix Janus bifrons, *Chemn.* xi. 307. t. 213. f. 3016, 3017.
(Helicella), *Fér. Pr.* 233.
Helix Janus, *Pfr. Proc. Zool. Soc.* 1842, p. 87 ; *Mon. Helic.* i. 77 ; *Symb.* ii. 19 ; *Ic.* i. 88.
Chemn. ed. 2, *Helix*, n. 59. t. 11. f. 4–6.
Reeve, Icon. 494. t. 91.
Hombr. & Jacq. Voy. Pol Sud, Moll. t. 5. f. 1–3.
Helix Mackensii, *Souleyet in Voy. Bonite, Moll.* t. 28. f. 27–29.
Nanina (Ariophanta) Janus, *Alb. Helic.* 62.
Helix Mackensiana, *Soul. Revue Zool.* 1841, p. 347.

Helix Balesteriana, *Lea, Trans. Am. Phil. Soc.* vii. 460. t. 12. f. 10.
Ariophanta Janus, *Beck, Ind.* 5.
Hab. Mount Ophir, Malacca.

7. Ariophanta nicobarica.

Shell perforate, sinistral, solid, globular, obliquely striated, chestnut-red, white-zoned at the suture, outline and base; spire short, obtuse; whorls five and a half, slightly convex, the last descending in front, inflated beneath; aperture rounded-lunar, concolorous inside; peristome simple, obtuse, white, columellar margin slightly reflected, almost covering the perforation. Lat. maj. 37, min. 30, alt. 27 mill.

Helix (Pomatia contraria) nicobarica, *Chemn.* ix. pt. 1. p. 79. t. 108. f. 911, 912.
Helix nicobarica, *Desh. Guér. Mag.* 1839, t. 3.
Pfr. Mon. Helic. i. 40.
Chemn. ed. 2, *Heliæ*, n. 22. p. 49. t. 6. f. 6, 7.
Ariophanta nicobarica, *Beck, Ind.* p. 5. n. 7.
Hab. Nicobar Islands.

8. Ariophanta Rumphii.

Shell perforated, sinistral, orbiculate, keeled, dark cinnamon, white-banded at the keel, nearly level above, irregularly rugosely striated, base convex, striated; whorls five and a half, level; aperture subrhombic, brown inside; peristome simple, columellar margin passing above into a spreading triangular lamina. Lat. maj. 44, min. 36, alt. 20 mill.

Helix Rumphii, *V. d. Busch in Phil. Icon.* i. 1. p. 9. t. 1. f. 2.
(Nanina?), *Pfr. Symb.* ii. 20; *Mon. Helic.* i. 76, iii. n. 283.
Chemn. ed. 2, *Helix*, n. 60. t. 11. f. 7–9.
Reeve, Icon. n. 480. t. 88.
Nanina Rumphii, *Mouss. Jav. Moll.* 18. t. 1. f. 2.
Nanina (Ariophanta) Rumphii, *Albers, Helic.* 62.
Hab. Java.

9. Ariophanta Cysis.

Shell narrowly and deeply umbilicated, sinistral, depressed-globular, rather thin, sculptured with oblique fold-like striæ, brownish horn-coloured; spire convex, with the apex flattened; whorls four, convex, enlarging rapidly, the last inflated, obsoletely keeled at first, then rounded, shortly descending anteriorly, turgid beneath; aperture oblique, large, lunate, rather ovate; peristome simple, sharp, with convergent margins, outer and

basal margins imperceptibly thickened, columellar margin shortly reflected. Height 13, greatest breadth 43, least breadth 35 mill. (*Bens.*)

Helix Cysis, *Benson in Ann. & Mag. N. H.* 2nd ser. ix. 1852, 404.
Pfr. Mon. Suppl. 92.
Helix Cystis, *Reeve, Conch. Icon.* n. 737. t. 123.
Hab. Neilgherries, South India (*Jerdon*).

12*. ORPIELLA.

"Animal with the usual anal lappel of *Nanina* covering the mucous pore, and six other smaller ones between this and the shell arranged in a double series along the back of the tail.

"Shell somewhat like *Cyclostoma tigrinus*."—*Gould.*

1. Orpiella Scorpio.

Shell chestnut-red, tessellated with purplish-black radiating lines; spire depressed beneath, scarcely convex; whorls four and a half, convex.

Helix (Nanina) Scorpio, *Gould, Exped. Shells*, 24, 1846; *Proc. Boston Soc.* 1846, 178; *Exped. Shells*, 1851, 33. f. 87.
Helix Scorpio, *Pfeiffer, Mon. Helic.* i. 431; iii. 272. n. 1632.
Hab. Feejee Islands.

13. ZONITES.

Shell broadly umbilicated, orbiculate, convex or discoidal, striated or decussated beneath, smooth, shining; whorls six or seven, gradually increasing in size; mouth oblique, lunate; peristome straight, acute, and slightly thickened internally.

"The animal (*Helix algira*) with the orifices for the generative organs on the neck, nearer the edge of the mantle than the head; the lobes of the collar not larger than in other *Helices*, and sometimes edge the shell; the lips or buccal tentacles are very contractile and placed entire beneath the mouth, extending laterally so as to be rather wider than the foot. If the mucous pore does not exist in this species as in the *Arions*, a well-marked slit is to be observed in its place, to which the grooves on the upper part of the foot tend."—*Férussac, Tab. Syst.* 10.

According to M. Morelet the subcaudal gland of *Z. euryomphala* is large and distinct, and the foot broad, dilated, and depressed behind.

Zonites (algireus), *Montf. Conch.* ii. 283, 1810.
Beck, Index.
Albers, Heliceen, 63.
Tragomma (algireus), *Held in Isis,* 1837, 916.
Ægopsis (verticillus), *Fitzinger, Syst. Verz.* 99.
Helicoides (algira), *Dumas, Compt. Rend.* xxv. 113.

If M. Desmoulins' figure of the animal of *Ariophanta* is correct, it and *Zonites* will form a section by themselves, as they are figured with the foot depressed and broad at the end, like the *Arions* and *Helices*, and not compressed and truncated, like the *Helicarions*, *Naninæ*, *Stenopi*, &c. Guilding's, Hardwicke's and Layard's figures of these animals, taken from life, show that the compressed form does not depend on the animal having been contracted in spirits.

The jaws of *Zonites* are without any marginal denticles, but with a more or less large rostriform prominence on the middle of the free edge; the conical purse is without any versicula multifida, dart or dart-case.—*Moquin-Tandon, Journ. Conch.* 1853, 234.

a. *American.—Subcaudal gland large.* Moreletia, *Gray.*

1. Zonites euryomphala.

Shell umbilicated, orbiculate-convex, thin, pellucid, greenish horny, regularly costulate-striate above, obsoletely decussated with concentric lines, more distantly striated beneath, very bright; spire scarcely elevated, obtuse; whorls six, slightly convex, the last dilated, rather depressed, not descending in front; umbilicus large, pervious; aperture obliquely lunate-oval, iridescent inside; peristome straight, simple, margins connivent. Lat. maj. 37, min. 32, alt. 17 mill.

Animal (*Morelet*, t. 2. f. 6) pale grey, with darker grooves; head blackish, with radiating striæ between the tentacles converging towards the mouth; labial appendages small, prominent, bright yellow; tentacles black; subcaudal gland large, erect.—*Morelet.*

Helix euryomphala, *Pfr. Proc. Zool. Soc.* 1845, p. 71; *Mon. Helic.* i. 107; *Ic.* n. 943. t. 144. f. 1, 2.
Morelet in Journ. Conch. 1851, ii. 14. t. 2. f. 6.
Reeve, Icon. n. 533. t. 97.
Helix cymbalum, *Morelet, Test. Noviss.* i. 7. n. 1.
Hab. Coban, Guatemala.

b. *European or North African.—Subcaudal gland moderate.*
Zonites.

2. ZONITES ALGIRA. B.M.

Shell widely umbilicated, orbiculately-convex, obsoletely angulated, very minutely granulately-decussated above, radiated with a deciduous horny-lutescent epidermis, shining beneath; whorls six, the highest plane, the last convex; aperture widely obliquely lunar; peristome straight, callous inside. Lat. maj. 45, min. 40, alt. 19 mill.

Helix algira, *Linn. Syst.* ed. 10. p. 769; ed. 12. n. 660. p. 1242.
Born, Mus. 366. t. 14. f. 3, 4.
Chemn. ix. pt. 2. p. 77. t. 125. f. 1093, 1094.
(Helicella) *Fér. Pr.* 203; *Hist.* t. 81. f. 1–7.
Lam. Hist. 77; *ed. Desh.* 46.
Blainv. Mal. 461. t. 40. f. 8.
Drap. Tabl. 94. n. 45. p. 115. t. 7. f. 38–40.
Rossm. iii. 1. f. 147.
Sow. Con. Mon. f. 279.
Pfr. Mon. Helic. i. 126; *Ic.* i. 66.
Chemn. ed. 2, *Helix*, n. 39. t. 8. f. 3, 4.
Desh. Helic. p. 91. n. 124.
Helix oculus-capri, *Müll. Verm.* ii. 39. n. 239.
Helix ægopthalmos, *Gmel.* p. 3614. n. 5.
Zonites algireus, *Montf.* 283. t. 71.
Zonites algira, *Beck, Ind.* 8.
Alb. Helic. 63.
Tragomma algirum, *Held in Isis*, 1837, p. 916; *Descript. de l'Egypte*, t. 2. f. 20.
Helix lusitanica, *Linn. Mus.* (fide *Hanley*).
Mörch, Cat. Kierulf. p. 1. n. 4 (Zonites).
Helicoides algira *Dumas, Compt. Rend.* xxv. 113 (compare *Pfr. in Z. f. M.* 1850, p. 123).
Hab. S. France; Sicily; Sardinia; Corsica.

3. ZONITES VERTICILLUS. B.M.

Shell widely umbilicated, nearly semiglobose, minutely decussated above, yellowish-brown, ornamented with broad remote yellow stripes, beneath glabrous, shining, greenish-yellow; whorls seven, all convex; aperture lunate-subcircular; peristome acute, simple, white, callous inside. Lat. maj. 33, min. 29, alt. 19 mill.

Helix (Helicella) verticillus, *Fér. Pr.* 202; *Hist.* t. 80. f. 8 & 9 (young).
Lam. Hist. 78; *ed. Desh.* 47.
C. Pfr. Naturg. iii. 23. t. 5. f. 4, 5.
Rossm. iii. 2. f. 149.
Pfr. Mon. Helic. i. 127; *Ic.* i. 185.
Chemn. ed. 2, *Helix*, n. 150. t. 24. f. 9, 10.
Desh. Helic. p. 92. n. 125.
Helix algira, *Brumati*, 31.
var. *Cantr. Malac.* 126.
Pomatia Baltheus, *Bolt. Mus.* p. 74. n. 951.
Ægopsis verticillus, *Fitzing, Syst. Verz.* 99.
Zonites verticillus, *Beck, Ind.* 8.
Alb. Helic. 63.
Tragomma verticillus, *Held in Isis*, 1837, p. 916.
Hab. Austria; Styria; Carinthia; Carniola.

4. Zonites albanica.

Shell widely umbilicated, discoidal, at last keel-less, granulately-decussated, horny-brown, white-zoned, beneath yellowish, ornamented with a broad horny-brown band, shining; whorls six, slightly convex; umbilicus large, pervious; aperture obliquely lunar; peristome simple, acute, callous inside, margins nearly approximate. Lat. maj. 37, min. 33, alt. 14–15 mill.

Helix albanica, *Ziegl. Mus. Rossm.* iii. 1. f. 148.
Pfr. Mon. Helic. i. 127.
Chemn. ed. 2, *Helix*, n. 615. t. 96. f. 1–3.
Zonites albanica, *Beck, Ind.* 8.
Alb. Helic. 63.
Tragomma albanicum, *Held in Isis*, 1837, p. 916.
Hab. Dalmatia and Albania.

5. Zonites compressa.

Shell widely umbilicated, depressedly-orbicular, obtusely angulated, above reddish, silky, very minutely trellised, beneath shining, white-zoned, radiated with ashy and whitish, below the angle interruptedly festooned with reddish; whorls six, slightly convex; aperture obliquely lunar; peristome straight, acute, slightly lipped inside. Lat. maj. 32, min. 28, alt. 12 mill.

Helix compressa, *Ziegl. Mus. Rossm.* iii. 2. f. 150.
Pfr. Mon. Helic. i. 128.
Chemn. ed. 2, *Helix*, n. 616. t. 96. f. 4–6.
Tragomma compressum, *Held in Isis*, 1837, p. 916.

Zonites, *Alb. Helic.* 63.
Helix morlachica, *Parr. MSS.*
Hab. Fiume.

6. ZONITES ACIES. B.M.

Shell widely umbilicated, convexly lenticular, keeled, red-horny above, rather opake, costate-striate, very finely decussated, beneath whitish, shining, pale horny below the compressed, whitish keel; whorls six and a half, storied; aperture lunate, hatchet-shaped; peristome straight, acute, very thinly lipped inside. Lat. maj. 31, min. 29, alt. 12 mill.

Helix acies, *Partsch, MS.*
(Helicella) *Fér. Hist.* t. 80. f. 7.
Rossm. ii. 3. f. 152.
Pfr. Mon. Helic. i. 128.
Chemn. ed. 2, *Helix*, n. 619. t. 96. f. 15–17.
Desh. Helic. p. 366. n. 434.
Helix acutimargo, (*Ziegl.*) *Brumati*, 30. f. 3, 4.
Helix algira, *Olivi ?*, *Cantr. Malac.* 127.
Carocolla acutimargo, *Menke, Syn.* ed. 2. 24.
Tragomma acies, *Held in Isis*, 1837, p. 916.
Zonites acies, *Beck, Ind.* 8.
Alb. Helic. 63.

Hab. Dalmatia.

7. ZONITES CROATICA. B.M.

Shell widely umbilicated, orbiculate-convex, above closely costulate-striate, very finely decussated, silky, horny, obtusely angled, white-zoned, beneath shining, yellowish-white, horny-banded beneath the angle; whorls seven, the highest acutely keeled, the rest slightly convex; aperture obliquely lunar; peristome straight, acute, slightly callous inside, white. Lat. maj. 28, min. 25, alt. 13 mill.

Helix croatica, *Partsch, MS.*
Rossm. iii. 3. f. 151.
Pfr. Mon. Helic. i. 129.
Chemn. ed. 2, *Helix*, n. 151. t. 24. f. 7, 8.
Desh. Helic. p. 365. n. 432.
Helix acies, var., *Cantr. Malac.* 127.
Zonites croatica, *Beck, Ind.* 8.
Alb. Helic. 63.
Tragomma croaticum, *Held in Isis*, 1837, p. 916.
β. Helix croatica, *Fér. Hist.* t. 80. f. 5.

Hab. Croatia; β. Carniola.

8. Zonites carica.

Shell widely umbilicated, paucispiral, depressedly-orbicular, obtusely keeled, above silky, very finely decussated, regularly granulated, striated, horny-lutescent, beneath smooth, horny-whitish, yellow-rayed; suture deep; whorls four and a half, slightly convex; aperture obliquely lunate-oval; peristome acute, straight, rather callous-lipped inside; lip white, externally luteous-pellucid. Lat. maj. 25, min. 23, alt. 11–12 mill.

Helix carica, *Roth, Diss.* 17. t. 1. f. 6, 7, 21.
Pfr. Mon. Helic. i. 129.
Reeve, Icon. n. 946. t. 146.
Zonites carica, *Alb. Helic.* 63.
Hab. Caria.

9. Zonites chlorotica.

Shell orbiculate-convex, rather thin, greenish-yellow, sculptured above with crowded and equal grains, and on the last whorl with close longitudinal and more distant concentric striæ, forming oblong grains; spire shortly conoidal, convex, with the apex blunt; whorls five, the upper ones scarcely convex, the last one more convex, slightly keeled, rounded, smooth and shining beneath; umbilicus middle-sized; aperture little oblique, large, roundish, sublunate, pearly within; peristome simple, straight, with a white lip internally, with the margins convergent, columellar margin slightly reflected above. Height 16, greatest breadth 30, least breadth 27 mill. (*Pfr.*)

Helix chlorotica, *Pfr. in Z. f. M.* 1851, p. 127; *Ic.* n. 1019. t. 153. f. 18, 19; *Mon. Suppl.* 117.
Hab. Grecian Archipelago?

10. Zonites smyrnensis. B.M.

Shell widely umbilicated, orbiculate-convex, obtusely keeled, horny-lutescent, above finely granulately decussated, beneath smooth, shining, remotely yellow-rayed; whorls six, terraced; aperture obliquely lunar; peristome straight, simple, acute, remotely lipped inside. Lat. maj. 28, min. 26, alt. 13 mill.

Helix smyrnensis, *Roth, Diss.* 16. t. 1. f. 8, 9.
Pfr. Mon. Helic. i. 129.
Chemn. ed. 2, *Helix*, n. 617. t. 96. f. 12–14.
Zonites, *Alb. Helic.* 63.
Hab. Island of Syme, near Smyrna.

11. Zonites gemonensis.

Shell widely umbilicated, orbiculate-convex, keeled, lutescent, above striated, slightly decussated, silky, beneath glabrous, shining; whorls six, nearly level; aperture angularly-lunar; peristome straight, acute, slightly lipped. Lat. maj. 18, min. 16. alt. 8 mill.

Helix gemonensis, *Fér. Pr.* 204; *Hist.* t. 80. f. 6.
Rossm. iii. 3. f. 153.
Pfr. Mon. Helic. i. 129.
Chemn. ed. 2, *Helix*, n. 618. t. 96. f. 12–14.
Desh. Helic. 365. n. 433.
Helix isodoma, *Jans, Mantissa*, 2.
Zonites gemonensis, *Beck, Ind.* 8.
Tragomma gemonense, *Held in Isis*, 1837, p. 916.
Zonites, *Alb. Helic.* 63.
Hab. Friulia.

12. Zonites Cycloplax.

Shell orbiculate, depressed, decussated above with close-set waving and radiating striæ and with spiral striæ, granulated, reddish-brown horn-coloured, with a chestnut peripherical band, more smooth and paler beneath; spire moderately convex, with the apex rather flattened; suture indistinct, then impressed; whorls five, flat, the last slightly (when young, sharply) keeled, dilated anteriorly, rather turgid anteriorly near the suture, inflated beneath; umbilicus wide; aperture lunate, somewhat quadrangular, oblique, sometimes with a slight whitish internal lip; peristome simple, sharp, columellar margin not reflected, forming an obtuse angle with the basal margin. Height 17, greatest breadth 42, least breadth 34 mill. (*Benson.*)

Helix Cycloplax, *Benson, in Ann. & Mag. N. H.* ser. 2. x. 348.
Reeve, Icon. n. . t. .
Pfr. Mon. Suppl. p. 636.
Hab. Darjiling, Sikkim Himalayah (*Trotter*).

Fam. 5. HELICIDÆ.

Foot tapering behind, without any subcaudal gland. Body and shell subcentral, dorsal. Teeth numerous, four-sided, close together on the lingual band. Eyes on the top of the upper elongated retractile tentacles; lower tentacles smaller, rarely wanting.

Limacea (Limaciens), *Lamk. Phil. Zool.* 1809; *Hist. A. s. V.* vi. 42, 1822.
Menke, Syn. ed. 2. 13, 1830.
Desh. Enc. Méth. iii. t. , 1830.
Limaceæ, *Menke, Syn.* 7, 1828.
Limaces, *Férussac, Prod.* 12, 1819; *Tab. Syst.* 31, 1821.
Rang, Man. 150, 1829.
Limacidæ, *Gray, Lond. Med. Repos.* 1821; *Ann. Phil.* viii. 107, 1824.
Risso, Eur. Mérid. iv. 54.
Fleming, B. A. 255, 1828.
Limacina, part., *Wiegm. Handb. Zool.* 1832.
Limacinæ, *Swainson, Malac.* 162. 189. 327, 1840.
Limacinea, *Blainv. D. S. N.* xxxii. 247, 1824; *Man. Malac.* 454, 1825.
Reeve, Proc. Zool. Soc. 1841, 76; *Conch. Syst.* ii. 59, 1842.
Limacoidea (part.), *Fitz. Syst. Verz.* 88, 1833.
Limaciana, *Jay, Cat.* 32, 1836.
Limacidia, *Rafin. Anal. Nat.* 1815.
Limacinacea, *Reeve, Proc. Zool. Soc.* 1841, 76; *Conch. Syst.* ii. 59, 1842.
Heliceæ, *Menke, Syn.* 8, 1828.
Helicina, *Wiegm. Handb. Zool.* 523, 1832; ed. 2. 550, 1843.
MacGill. Moll. Aberd. 43.
Gray, Turton's Man. ed. 2. 110, 1840; *Pr. Z. S.* 1847, 170.
Helicinæ, *Swains. Malac.* 160. 330, 1840.
Helicoidea, *Fitz. Syst. Verz.* 92, 1833.
Christ. & Jan. Catal. 1, 1832.
Cochleadea, *Beck, Index*, 1, 1837.
Cochleadea inoperculata, *Fleming, Brit. Anim.* 255. 257, 1828.
Helicaceæ, *Hinds, Zool. Sulph.* 55, 1844.
Helicea (Colimaces), part., *Lamk. Phil. Zool.* 1809; *Extr. du Cour.* 1812; *Hist. A. s. V.* vi. 61.
Deshayes, Enc. Méth. iii. 1552. t. .
Cochlea, *Adanson, Voy. Seneg.* 14, 1757.
Glischrus, *Studer, Syst. Verz.* 11, 1820.
Helicidæ, *Gray, Ann. Phil.* viii. 107, 1824; *Turton's Man.* ed. 2. 101. 109, 1840; *Syn. B. M.* 1840.
Risso, Hist. Eur. Mérid. iv. 58.
Guilding, Zool. Journ. ii. 440; iii. 527.
Fleming, Brit. Anim. 255, 1828.
Swainson, Malac. 160. 326, 1840.
Colimacea, *Reeve, Conch. Syst.* ii. 64.
Helicea, *Menke, Syn.* ed. 2. 14, 1830.
Desh. Enc. Méth. iii. 552. t. , 1830.
Forbes, Malac. Mon. 7, 1838.

Helicea, *Ehrenb. Symb. Phys.* 1831.
Oken, Isis, 1833, 734.
Pfeiffer, Symb. ad Hist. Hel. 4, 1841; *Symb.* ii. 1842: *Zeitschr. f. Malac.* 1846, 2.
Cochleæ, *Férussac, Prod.* 18, 1819; *Tab. Syst.* 31, 1821.
Rang, Man. 156, 1829.
Pfeiffer, Naturg. iii. 2, 1828.
Pupadæ, *Fleming, Brit. Anim.* 255, 1828.
Chilogymnum, *Ehrenberg, Symb. Phys.* 1831.
Chilodontem, *Ehrenberg, Symb. Phys.* 1831.
Colimacidæ, *D'Orbigny, Moll. Canar.* 1837; *Moll. Cuba,* i. 137. 140, 1841; *Palæont. Franç.* 1842.
Geinitz, Grundr. d. Verst. 319, 1845.
Helicida, *Beck, Ind.* 5, 1837.

Synopsis of the Tribes.

I. *Body elongate, attached its whole length to the upper surface of the foot, and entirely or partially covered by a dorsal mantle.* Scutifera.

1. Philomycina. Mantle thin, as large as the foot. Shell none. Tentacles four.

2. Limacina. Mantle shield-like, coriaceous on the front of the back, entirely covering a flat oblong, not spiral, shell, produced and free in front over the nape.

II. *Body more or less spiral, prominent on the middle of the upper surface of the foot, and covered with a more or less spiral shell sometimes partly hidden by the reflexed part of the produced edge of the mantle.* Cochleophora.

a. *Body and mouth of the shell depressed, being broader from side to side than long from back to front, that is to say, in the longitudinal axis of the shell.*

3. Peltellina. Mantle enclosed in the shell in front, and produced behind over the hinder surface of the shell. Shell flat, ear-shaped.

4. Vitrinina. Mantle produced and thickened in front beyond the edge of the mouth of the shell, forming a thickened coriaceous collar on the nape.

5. Pfeifferiana. Mantle edge dilated, produced and reflexed over, covering more or less of the polished surface of the shell.

6. Helicina. Mantle edge enclosed within the edge of the shell.

b. *Body of animal and mouth of the shell compressed, longer than broad from back to front than from side to side, that is to say, in the direction of the longitudinal axis of the shell.*

7. Succiniana. Animal vesicular, very large for the shell. Shell expanded, imperforate. Spire short. Aperture very large. Peristome thin, simple, pillar rounded in front.

8. Achatinina. Animal moderate, enclosed. Shell ovate, imperforate. Whorls many. Aperture elongate. Peristome thin, not reflected. Front of the pillar truncated. Pillar rarely plaited.

9. Bulimina. Animal moderate, enclosed. Shell ovate, perforate or imperforate. Whorls many. Aperture elongate. Peristome thin or reflected, rounded in front.

10. Clausiliana. Animal small, enclosed. Shell subcylindrical, perforated. Mouth roundish or elongate, entire or plicate, with a distinct groove in front forming a ridge round the axis. Peristome reflexed. Whorls at first slowly enlarging, then nearly of the same size, then contracting in size near the perfect mouth.

I. Scutifera. *Body elongate, attached its whole length to the upper surface of the foot, and entirely or partially covered with a dorsal mantle.*

Tribe 1. PHILOMYCINA.

Mantle thin, as large as the foot, entirely covering the back. Tentacles four. Respiratory aperture on the side near the head.

Philomycina, *Gray, P. Z. S.* 1847, p. 170.

Synopsis of Genera.

1. Philomycus. Body convex.—American.

2. Meghimatium. Body depressed.—Asiatic.

1. PHILOMYCUS.

Animal convex, rather compressed, tapering and acute behind. N. America.

Philomycus, *Rafinesque, Annal. Nat.* 10, 1820.
Férussac, Tab. Syst. 9. 96 *m*. 96 *y*, 1821.
Philippi, H. C. 239.
Gray, P. Z. S. 1847, 170. n. 434.
? Eumelus, *Rafin. Annal. Nat.* 10, 1820.
Férussac, Tab. Syst. 9. 96 *m*. 96 *y*, 1821.
Limax, § C (Philomique), *Blainv. Man. Malac.* 464, 1825.
? Limax, § D (Eumèle), *Blainv. Man. Malac.* 464, 1825.
? Veronicella, part. (Eumèle), *Gray, P. Z. S.* 1847, 178. n. 488.
Limacellus (lactescens), *Blainv. Journ. Phys.* 1817, 442. t. 11. f. 5; non *Férussac, Tab. Syst.* 10. 16. 96 *u*. 96 *z*; *Hist. Moll.* ii. 52 (not *Brard*).
Gray, Fig. Moll. iv.
Limacella, *Blainv. Man. Malac.* 463 (not *Turton*).
Tebenophorus (carolinensis), *Binney, Boston Journ. Nat. Hist.* 1841–51, iv. 163.
Wyman, Boston J. N. H. iv. 411.

The *Philomyci* have an elongated tapering form; the head with two long and two short tentacles; the surface somewhat granular or regularly wrinkled; the back is entirely enveloped with a shield-like mantle; in the front part of the right side is a notch or opening into the respiratory cavity; the surface of the shield is smooth, neither granulated nor folded.

"Back with a large cavity occupying the whole extent of the dorsal and lateral regions."—*Wyman.*

Mouth as in the genera *Limax* and *Helix*. The tongue is covered with an immense number of minute teeth, arranged in a transverse-linear series, and having a form more or less conical. Those on the median line (fig. 4 *a*) are readily distinguished from the lateral teeth by their symmetrical form, and by being smaller than those nearest to them on either side. The lateral teeth (fig. 4 *b. b.* & *c. c.*) are all more or less inclined towards the axis of the tongue. Those near the median line have an obtusely conical form, and at the apex are surmounted by a sharper conical point. As they recede from the centre this point dis-

appears and the teeth become regular cones, and at the same time gradually diminish in size, the extreme lateral ones being reduced to minute papillæ. The respiratory cavity is attached to the viscera, and has no connection whatever with the shield.—*Wyman, Boston Journ.* iv. t. 22. f. 4 *c. c.*

Shell minute, nail-like, concealed in the front part of the mantle.

They are found under decaying logs in North America, and under bits of wood or stones in damp places, feeding on decaying vegetable matter.

M. De Blainville observes, "The combination of characters I have given for *Limacella* are so extraordinary, that I doubt if I have carefully observed the mollusc on which it was founded." —*Man. Malac.* 464. I fear this observation is equally applicable to most of the genera described from the specimens in the British Museum during his very short visit to London in 1817.

In the Proceedings of the Zoological Society (1847, 178) I referred *Eumelus* to *Veronicella* by an oversight; it clearly belongs to this genus.

Dr. Philippi (*Handb. Malac.* 238), misled by Blainville's character "*bouclier n'est pas distinct*," intended thereby to describe that the mantle covers the whole body instead of only a part of it.

1. PHILOMYCUS CAROLINENSIS. B.M.

"Grey brown mottled; back with three darker streaks and a series of black dots."

Limax carolinensis, *Bosc, Vers de Buffon de Deterville*, i. 80. t. 3. f. 1, cop. *Férussac, Hist. Moll.* ii. 77. t. 6. f. 3.

Roissy (*Buffon de Sonnini*), *Mollusques*, v. 183. n. 11.

Vaginulus carolinensis, *Férussac, Tab. Syst.* 15.

Philomycus carolinensis, *Férussac, Tab. Syst.* 96^{y}.

Tebenophorus Carolinensis, *Binney, Journ. Bost. N. Hist. Soc.* iv. 163.

Wyman, Bost. Journ. N. H. iv. 411. t. , anat.

Limax togata, *Gould, Invert. Mass.* 3.

Hab. N. America; Carolina.

"*Limax togata.* The shield is neither granulated nor folded, but exhibits a uniform rough appearance, somewhat like deer-skin. Common in wood under logs.—*Gould.*

2. PHILOMYCUS LACTESCENS. B.M.

"Limax lactiformis, *Shaw.*"

Limacellus lactescens, *Blainv. Journ. Phys.* 1817, p. 442. t. 11. f. 5.
Mrs. Gray, Fig. Moll. t. 285. f. 10.
Férussac, Tab. Syst. 16. 96[c]; *Hist.* ii. 52. t. 7. f. 1, copied *Blainville.*
Limacella elfortiana, *Blainv. Man. Malac.* 464. t. 41. f. 4.
Hab. ——? West Indies?

These specimens appear to be only bleached examples of the preceding species, or one very nearly allied to it; but they (there are two) are in too bad a state to determine this question with accuracy. They form part of Sir Hans Sloane's Collection, and may have been brought from Jamaica or N. America.

3. Philomycus dorsalis.

Philomycus dorsalis, *Binney.*
Tebenophorus dorsalis, *Binney, Pr. Bost. Soc. N. H.* 1841, p. 51.
Hab. N. America.

4. Philomycus quadrilus.

Grey, back smooth, with four rows of irregular black spots; tentacles long, black, close; body attenuated in front, blunt behind. Length 6 lines.

Philomycus quadrilus, *Rafinesque, Ann. of Nat.* 10, 1820.
Férussac, Tab. Syst. 15. 96[y].
Hab. N. America; River Hudson.

5. Philomycus oxyurus.

Fulvous grey, slender; back ridged longitudinally; tentacles brown; the sides are very short; tail acute, keeled above. Length 8 lines.

Philomycus oxyurus, *Rafinesque, Ann. of Nat.* 10.
Férussac, Tab. Syst. 15. 96[y].
Limax oxyurus, *Blainv. Man. Malac.* 464.
Hab. North America; New York.

6. Philomycus fuscus.

Brown; tentacles thick; back smooth; tail compressed, acute. Length 3 to 12 lines.

Philomycus fuscus, *Rafinesque, Ann. of Nat.* 10.
Férussac, Tab. Syst. 15. 96[y].
Hab. N. America; Province of Ohio.

7. PHILOMYCUS FLEXUOLARIS.

Fulvous; back varied with flexuous brown lines, slightly cross ridged, attenuated behind; tail blunt. Length 1 or 2 inches.

Philomycus flexuolaris, *Rafinesque, Ann. of Nat.* 10.
Férussac, Tab. Syst. 15. 96^{y}.

Hab. N. America; the Catskill Mountains.

8. PHILOMYCUS NEBULOSUS.

Body nearly cylindrical, rounded at each end; back with a cross of black and grey spots; tentacles brown. Length 1 inch.

Eumeles nebulosus, *Rafinesque, Ann. of Nat.* 10, 1820.
Férussac, Tab. Syst. 15. 96^{y}.
Limax nebulosus, *Blainv. Man. Malac.* 464.

Hab. N. America; Ohio and Kentucky.

9. PHILOMYCUS LIVIDUS.

Back smooth, convex; lurid brown, grey beneath, blunt behind; tentacles black. Length 1 inch.

Eumeles lividus, *Rafinesque, Ann. of Nat.* 10, 1820.
Férussac, Tab. Syst. 15. 96^{y}.

Hab. N. America; Ohio; Indiana; Kentucky.

2. MEGHIMATIUM.

Body rather depressed, convex above, rounded at the end. Mantle smooth. Respiratory aperture on the front of the right side. Tentacles four.

Shell none.

Asiatic. Scarcely to be distinguished from the former as a genus.

Meghimatium, *Van Hasselt, Bull. Univ. Sci.* 1824, iii. 82.
Cuvier, Règ. Anim. ed. 2.
Desh. in Férussac, Hist. Moll. ii. 96^{3}.
Gray, Proc. Zool. Soc. 1847, 170.
Incilaria, *Benson in Cantor, Chusan* (*animal*), *Ann. & Mag. N. H.* 1842, ix. 486.
Philippi, Handb. Conch. 238.

The name is from *incile*, a *gutter*, with reference to the gutter-like channel which divides the mantle from the foot.—*Benson.*

1. MEGHIMATIUM STRIATUM.

Body elongate, attenuated at each end, pointed behind; back convex, white, with narrow black longitudinal lines; upper tentacles elongate, cylindrical, lower shorter.

Meghimatium striatum, *Van Hasselt, Bull. Sci. Nat.* 1824, iii. 82.
Meghimatium strigatum, *Férussac, Hist. Moll.* ii. 96⁵. t. 8 E. f. 1.
Hab. Java, in high forests (*Van Hasselt*).

2. Meghimatium reticulatum.

Body elongate, cylindrical, convex above, flat beneath; mantle smooth, brown, netted with irregular blackish lines; tentacles cylindrical, upper longer, pale brown.

Meghimatium reticulatum, *Van Hassalt, Bull. Sci. Nat.* 1824, iii. 82.
Férussac, Hist. Moll. ii. 96⁵. t. 8 E. f. 2, 3.
Hab. Java.

3. Meghimatium bilineatum. B.M.

Body livid, with scattered brown spots and dots, two lateral blackish lines, and a darker medial streak. Length 1½ inch.

Incilaria bilineata, *Benson, Ann. & Mag. N. H.* ix.
Hab. Chusan, in earth under roots, on trees, &c.

Body elongate, attenuated behind. Mantle everywhere margining the body. Tentacles four, upper eye-bearing, lower entire. Aperture of respiration on the right side near the front of the mantle.

4. Meghimatium cylindraceum.

Body smooth, dark brown (in spirits), oblong, rather ventricose.

Meghimatium cylindraceum, *Fér. Hist. Moll.* ii. 96⁴. t. 8 F. f. 8, 9.
Mrs. Gray, Fig. Moll. t. 286. f. 6.
Hab. ——? Only known by the figure of M. Férussac.

The larva of *Microdon mutabilis*, Linn., a Dipterous insect, has been described as a genus of *Limacidæ*, under the two names—

1. Parmula (cocciformis), *Von Heyden, Isis*, 1823, p. 1247.
2. Scutelligera (amerlandia), *Spix, Abhand. K. Baier. Akad. Wissen.* 1824, ix. 13.
Hesperus, Zeitschr. 1824, p. 295.
Oken, Isis, 1825, p. 583.
Götting. Gel. Anz. 1832, p. 1957.
Gray, Proc. Zool. Soc. 1847.
Philippi, Handb. Conch.
Elditt, Stettin Ent. Zeitung. 1845, p. 384. t. 1. f. 6–14.

Tribe 2. LIMACINA.

Mantle shield-like, on the front of the back, entirely covering a flat, oblong, not spiral shell, produced and free from the neck in front.

Limacina, *Gray, Turton's Man.* ed. 2. 109, 111(1840); *Proc. Zool. Soc.* 1847, p. 170.
Limax, *Férussac.*
Cochleæ nudæ terrestres, *Lister, Conch.*
Limacoidea, pars, *Fitz.*

Synopsis of the Genera.

1. Limax. Back rounded. Tail keeled. Dorsal shield marked with concentric striæ, simple behind. Shell flat.

2. Milax. Back keeled to the shield. Dorsal shield granulated or shagreened, truncated, with two small pores on its hinder edge. Shell convex.

3. Phosphorax. Back rounded above. Dorsal shield marked with a small posterior marginal luminous disc.

4. Malino. Back keeled. Dorsal shield large, front half concentrically, hinder longitudinally furrowed.

1. LIMAX.

Body elongate lanceolate, tapering behind, hinder part keeled, without any terminal gland. Back with elongate rugosities, separated by anastomosing grooves. Back of the neck with three grooves, the central one double, the lateral ones bent down to the side of the head just behind the aperture of reproduction on the right side. Shield anterior, marked with concentric striæ, rounded behind, enclosing an internally oblong shelly plate; front edge produced, free nearly to the lateral aperture. Pulmonary cavity under the shield, with the opening at the hinder part of the right edge. Orifice of the organs of generation on the side of the head just behind the base of the right tentacle.

Limax, part., *Lister, Hist. Conch.* i. 1685.
Linn. S. N. 1740.
Limax, *Férussac, Tab. Syst.* 10. 96ª, 96ᵣ, 1821; *Hist. Moll.* ii.
Hartmann, Neue Alpena, 1821, p. 208.
Philippi, Handb. Conch. 238.
Clark, Ann. & Mag. N. H. xii. 332.

Limas, *Cuvier, R. A.* ed. 2.
Voigt, iii. 41.
Limacias, *Rafin. Anal. Nat.* 1815.
Limacella (shell), *Brard, Coq. Paris*, 1815, not *Blainv.*
Limacellus (shell), *Turton, Manual*, ed. 1. 1831, not *Blainv.*
? Parmacella (nigricans), *Philippi, Moll. Sicil.*
Megaspis, *Krynick. MSS.* ined.
Krynickia, *Kaleniczenko, Bull. Soc. Moscou*, 1839, p. 30, not described.
Krynickellus, *Kaleniczenko, Bull. Soc. Moscou*, 1851, i. 215; *in Arch. Naturg.* 1852, p. 288.

Dr. John Kaleniczenko (*Bull. Soc. Imp. Nat. Moscou*, 1851, p. 215) describes a new genus of Russian slugs under the name of *Krynickellus*, because "le bouclier est libre dans sa partie antérieure jusqu'à l'orifice respiratoire, caractère qui la distingue des *Arions* et des *Limaces*." In this and all the other characters which are given, it agrees with *Limax cinereus, variegatus*, and all the species of the true *Limacinæ* that have been hitherto described.

The Slugs (*Limax*) sometimes suspend themselves by a kind of thread formed from the viscid secretion which covers their body; hence one of the smaller ones has been called *Limax filans*.

The shell of the Slug (*Limax*) is covered with a distinct periostraca. It has generally been believed that shells which are covered with a reflexed portion or imbedded in the mantle are destitute of this covering, and they have been separated from other shells for this reason.

This is an error arising from the theory that the *periostraca* of shells is analogous to the scarf skin (cuticle) of vertebrated animals, instead of its being merely the part consisting almost entirely of animal matter that is first deposited by the animal when it is about to enlarge its shell, and which forms the basis of the new part of the shell afterwards strengthened.

* *Mantle elongate, produced behind.*

1. LIMAX CINEREUS. B.M.

Grey, spotted; dorsal keel acute, elongate, white; tentacles grey or brown; shield pointed behind; respiratory hole posterior. *Shell* thin, concave.

Limace cinereo-nigricante, *Aldrov.* iv. 702.
Limax cinereus, *Lister, Phil. Trans.* 1674, ix. 96. t. 14; *Anim. Angl.* 127. t. 5. f. 6, 7, 9, 10; *Synops.* t. 102–105.
Müller, Verm. ii. 5.

Limax cinereus, *Drap. Hist.* 124.
Sturm, D. Fauna, t.
Limax cinereus maculatus, *Linn. Iter Œl.* 61.
Limax maximus, *Linn. S. N.* xiii. 1081.
Clark, Ann. & Mag. N. H. xii. 333. t. 10. f. 1, 2.
Limax ater, *Razoumowsky, H. N. Joral.* i. 266.
Limax fuscatus, *Razoum.* 267.
Limax cinereo-niger, *Sturm, D. Fauna*, t.
Nilsson, Moll. Suec.
Limax antiquorum, *Fér. Tab. Syst.* 20; *Hist. Moll.* ii. 68. t. 4.
Leach, Brit. Moll. 51.
Limax maculatus, *Nunneley, Trans. Phil. Soc. Leeds*, 1837, i. 46.
Shell.—Swammerd. B. N. i. 159. t. 8. f. 8.
Lister, An. Anim. t. 2. f. 15; *Syn.* 101. t. 102. f. 3.
Férussac, Hist. Moll. ii. f. 4.
Limacella parma, *Brard, Hist.* 110. t. 4. f. 1, 2, 9, 10.

Var. 1. Black, keel and middle band of foot white.—*Férussac, H. Moll.* t. 8 D. f. 1.
Clark, Ann. & Mag. N. H. xii. t. 10. f. 2.
Limax ater, *Razoum.*
Limax cinereo-niger, *Sturm, D. Fauna*, t.

Var. 1 *a*. Black, keel black.—*Férussac, Hist. Moll.* ii. t. 8 A. f. 1.

Var. 2. Grey, spotless; shield black blue.—*Férussac*, t. 4. f. 1.

Var. 3. Ashy; clypeus with black spots; back with black longitudinal streaks.—*Férussac*, t. 7. (adult) f. 2, 3 (jun.).
Clark, Ann. & Mag. N. H. xii. t. 10. f. 1.

Var. 4. Ashy; clypeus spotted; back with two black streaks; sides black dotted.

Var. 5. Ashy; clypeus and back with interrupted black streaks.
Limax variegatus, *Lister, An. Angl. App.* t. 2. f. 2; *Syn.* t. 101. f. 4.

Var. 6. Whitish; clypeus with rounded black spots; back with a series of black dots.—*Férussac*, t. 4. f. 8.

Var. 7. Ashy; clypeus and back with irregular black spots.
Aldr. 703. f. 3.
Lister, Syn. t. 102. f. 1.
Drap. Hist. t. 9. f. 10; *Enc. Méth.* t. 463. f. 1.

Var. 8. Ashy or blackish; back with fine whitish bands.
Limax fasciatus, *Razoum. H. N. Joral.* i. 267.

Var. 9. Ashy; back white spotted.—*Aldrov.* 703. f. 4.

Var. 10. Ashy, whitish varied, with two rows of black spots.

Var. 11. Ashy; edge white.

Hab. Europe.

On the copulation, consult *Werlich, Isis*, 1819, copied *Férussac, Hist. Moll.* t. 4 A. f. 1–4.

Var. *β. alpina.* Slender, cylindrical, obtuse behind, *keeled above*; above yellowish, clouded, with irregular spots; side dusky, edge blue; shield dark brown, scutiform behind.

Limax alpinus, *Férussac, Tab. Syst.* 21. 96ᵉ; *Hist. Moll.* t. 4 A. f. 5, 6, 7.

Limax cinereus, var., *Blainv. D. S. N.* xxv. 430.

Hab. Europe; Alps; in forests (*Studer*).

2. Limax marginatus. B.M.

Yellowish white, variegated with bluish grey; clypeus and back with two blackish bands; shield pointed behind, wrinkled; tentacles dusky; mucus colourless. Shell oval, thin, slightly concave.—*Clark*, t. 10. f. *b*.

Limax marginatus, *Müller, Verm.* ii. 10?
Macgillivray, Moll. Aberd. 78.

Limax arboreum, *Bouchard-Chantereaux, Cat. Moll. Terr. de Calais.*
Alder, Cat. Moll. North. 31.

Limax arboreus, *Forbes & Hanley, Brit. Moll.* iv. 17. t. E.E.E. f. 2.
Clark, Ann. & Mag. N. H. 1843, xii. 334. t. 9. f. 4–10.

Limax flavescens, *Clark, Ann. & Mag. N. H.* vi. 204.

Limax glaucus, *Clark, MSS.*

Limax salicetum, *Bouillet, Moll. Auv.* 18.

Limax rustica, *Millet, Mag. Zool.* 1843; *Moll.* t. 63?

Hab. Europe. England; on trees covered with moss (*Clark*). France (*Bouchard*).

See also Limax maculatus, *Leach, Brit. Moll.* 52.

3. Limax viridis.

Black-green, very smooth; head blunt; body cylindrical, rather obtusely truncated; back obsoletely keeled; clypeus small, narrow, elliptical; tentacles black; neck elongated; foot narrow, livid; aperture of respiration medial. Shell less concave and less attenuated in front than of *Limax squamatinus*, Morelet.

Limax viridis, *Morelet, Moll. Portugal*, 38. t. 3. f. 3.

Hab. Portugal; Serra de Caldeirao (*Morelet*).

4. Limax onguiformis.

Greenish brown; body cylindrical, with a black streak on each side, netted with very fine lines; shield elongate, elliptical, quite smooth, two-thirds the length of the body, with very small black dots; head and tentacles bluish, often contracted under the shield; foot livid; respiratory aperture *anterior*.

Limax onguiformis, *Morelet, Moll. Portugal*, 36. t. 3. f. 1.

Hab. Portugal; Algarve.

This slug appears less contractile than usual; it is always more or less elongate, probably on account of the thickness and rigidity of the outer skin.—*Morelet*.

5. Limax nitidus.

Deep black; shield smooth, shining, varnished, elongate, rounded, with the shell gibbose; body cylindrical, with very fine longitudinal grooves; the part of the nape under the front of the shield fulvous; foot reddish; respiratory aperture rather posterior; shell thin, elliptical, slightly convex, concentrically striated, concave and subcrystalline beneath.

Limax nitidus, *Morelet, Moll. Portugal*, 35.

Hab. Portugal; Algarve.

6. Limax squamatinus.

Small, slender, greenish-golden; sides bluish; tentacles black; body minutely reticulated, four-streaked, lateral lines parallel, dorsal converging into a single one just behind the shield; aperture of respiration medial, subanterior, thin, generally contracted; shield elongate, like *L. onguiformis*; shell elliptical, concave, attenuated in front.

Limax squamatinus, *Morelet, Moll. Portugal*, 37. t. 3. f. 2.

Hab. Portugal; Serra de Caldeirao (*Morelet*).

Suspends itself by a secretion from the end of the foot. Perhaps a variety of the former.

7. Limax melanocephalus.

Ashy grey; pulmonary region and tip of the tail yellowish grey; beneath paler; head and tentacles black; mucus grey; body elongate behind, keeled and acute; shell white, thin, flat, elliptical.

Krynickia melanocephala, *Kaleniczenko, Bull. Soc. Imp. Moscou*, 1839, i. 30.

Krynickellus melanocephalus, *Kaleniczenko, Bull. Soc. Imp. Moscou*, 1851, 215. 221. t. 5. f. 2; *in Arch. Naturg.* 1852, 288.
Megaspis melanocephala, *Krynick. MSS.* ined.
Hab. Caucasus.

8. Limax minutus.

Yellowish brown, mixed with black above, beneath paler; head and tentacles black; mucus milky.

Megaspis minuta, *Krynick. MSS.* ined.
Krynickellus minutus, *Kaleniczenko, l. c.* 224. t. 5. f. 3.
Hab. Caucasus.

9. Limax maculatus.

Olive, dull grey, white spotted, beneath uniform whitish; tentacles and lines on the nape darker blackish; tail acute, end with a short keel.

Krynickellus maculatus, *Kaleniczenko, l. c.* 226. t. 6. f. 2.
Hab. Southern Tauria.

10. Limax Eichwaldii.

Above uniform yellowish grey; tentacles and line on nape darker violaceous; tail rounded, blunt, tip keeled; mucus white.

Krynickellus Eichwaldii, *Kaleniczenko, l. c.* 226. t. 6. f. 1.
Hab. Tauria.

11. Limax Dymczeviczii.

Dull brown, with darker dots; neck with two white lines; tail rather acute, scarcely keeled at the tip.

Krynickellus Dymczeviczii, *Kaleniczenko, l. c.* 227. t. 6. f. 3.
Hab. Tauria.

** *Mantle short, rounded behind; respiratory hole very posterior. Shell flat.*

12. Limax flavus. B.M.

Yellowish green or reddish with brownish short lines, forming a close network on the whole body; tentacles bluish; shield short, rounded behind; aperture of respiration posterior.

Limax succini colore, *Lister, Exc. Anat.* i. t. 1, t. 3. f. 4; *Syn.* t. 106; *Tab. Anat.* t. 5. f. 4.
Limax flavus maculatus, *Linn. F. Suec.* 365.

Limax flavus, *Linn. S. N.* ed. xii. 1081.
Clark, Ann. & Mag. N. H. xii. 338. t. 11. f. 11, 12.
Forbes & Hanley, Brit. Moll. iv. 19. t. E. E. E. f. 1.
Gray, Man. 114. t. 5. f. 16.
Limax variegatus, *Férussac, Tab. Syst.* 21. 96 E; *Hist. Moll.* ii. 71. t. 5. f. 1–6.
Drap. Moll. 127. 9.
Stimpson, Shells N. Engl.
Nunneley, Trans. Leeds Phil. Soc. 41. t. 1. f. 3 (1837).
Leach, Brit. Moll. 53.
Bouchard, Moll. Calais.
Limax cinereus, var. γ, *Müller, Hist. Verm.* ii. 6.
Shell.—Lister, Exc. Anat. t. 3. f. 5.
Férussac, Hist. Moll. t. 5. f. 4.
Limacella unguiculus, *Brard,* 115. t. 4. f. 3.

Var. 2. Greenish or reddish.—*Férussac, l. c.* f. 2.
Limax variegatus, *Drap. Hist.* 127.
Morelet, Moll. Portugal, 34.

Var. 3. Yellowish.—*Férussac,* f. 3.
Limace blonde des cuves, *Brard.*

Var. 4. Brown, white spotted.

Var. 5. Limax variegatus, *Ehrenb. Symb. Phys.*

Hab. Europe: France; Spain; Portugal. N. America: Philadelphia (*Say*) (introduced?). Var. Syria (*Ehrenberg*).

M. Bouillet (*Cat. Moll. Auvergne,* 15) and M. Morelet (*Moll. Portugal,* 34) have observed that some Slugs, as *L. variegatus*, lose their colour if they are tormented or kept in confinement: thus *L. variegatus* passes from bright yellow to dull olive-green.

13. Limax megaspidus. B.M.

Shield short, rounded behind, smooth?, with the aperture of respiration on the hinder part of the right side.

Limax megaspidus, *Blainv. Journ. Phys.* 1817, t. 11. f. 11, copied *Férussac, Hist. Moll.* 76. t. 6. f. 4, from spec. in Brit. Mus.
Krynickellus cristatus, *Kaleniczenko, Bull. Soc. Imp. Nat. Mosc.* t. 5. f. 1 *a*, cop. *Blainville.*
Hab. ——?

The specimen in the British Museum is, and was when examined by De Blainville, quite destitute of any trace of its natural colour, and has been so long in spirits that it is impossible to distinguish the sculpture on the shield, or even if the body was

keeled; the end of the tail alone shows any traces of its original shape.

It is probably only a small bleached specimen of *Limax flavus*.

14. Limax moravicus.

Varied with black and yellow streaks; mantle black, spotless, in adult quite soft; pulmonary aperture behind the middle of the mantle. Thick, the size of *L. antiquorum*.

Limax moravicus, *Ehrenb, Symb. Phys.*

Hab. Central Europe; Moravia (*Ehrenb.*).

15. Limax canariensis.

Body elongate, high and large in front, tapering to a blunt tip behind, greyish white, black spotted, rugosely striated above; mantle oval, narrower in front, irregularly rugose; back scarcely keeled.

Shell oval, depressed, thin, with sharp edges (figs. 2, 3).

Limax canariensis, *D'Orb. in Webb & Berth. Canar. Moll.* 47. t. 3. f. 1, 2, 3.

Gray, Fig. Moll. t. 284. f. 2.

Limax antiquorum, *Ledru, Voy. Teneriffe*, i. 186, 1819.

Hab. Canaries; Teneriffe.

Differs from *L. antiquorum* in the small size of the keel.

In the figure the mantle is short, rather truncated behind, and the aperture rather behind the centre of the side.

16. Limax æquinoctialis.

Body short in front, marked with broad interrupted flattened ribs, smooth, elongate and strongly pointed behind, blackish; mantle oval, rather rugose, rounded at each end; respiratory opening three-fifths towards the hinder end; foot narrow.

Shell broad, oblong, thick at the top, thin on the edge.

Limax æquinoctialis, *D'Orb. Voy. Amér. Mérid.* 222.

Hab. S. America; Republic of Equator; Guayaquil. On damp places near the river (*M. Dupetit Thouars*).

**** Mantle short, truncated behind; respiratory hole subcentral. Shell flat.*

17. Limax agrestis. B.M.

Reddish or grey, brown spotted or spotless; clypeus elongate, rounded behind; respiratory hole subcentral; keel of back short and oblique.

Shell.—Limacella obliqua, *Brard, Hist.* 118. t. 4. f. 5, 6, 13, 15.

Limax cinereus alter, *Lister, Phil. Trans.* 1674, ix. 96. t. 15 ; *Anim. Ang.* 130. t. 2. f. 16.
Limax cinereus immaculatus, *Linn. Fn. Suec.* 366.
Limax agrestis, *Linn. S. N.* i. 1082.
Müller, Verm. ii. 8.
Drap. Hist. 126. t. 9. f. 9.
Sturm, D. Fauna, t.
Férussac, Tab. Syst. 21. 96 *e* ; *Hist. Moll.* ii. t. 5. f. 7, 10.
Ehrenb. Symb. Phys.
Morelet, Moll. Portugal, 34.
Nunneley, Ann. & Mag. N. H. i. 204. t. 1. f. 4.
O. Schmidt in Müller's Arch. 1851, p. 278.
Gray, Man. 117. t. 3. f. 17.
Leach, Brit. Moll. 54.
Clark, Ann. & Mag. N. H. xii. 338. t. 12. f. 13; shell, t. 10. f. *d.*
Forbes & Hanley, Brit. Moll. iv. 13. t. D. D. D. f. 2.
Limax reticulatus, *Müller, Verm. Hist.* 10.
Limax filans, *Hoy, Linn. Trans.* i. 183.
Latham, Linn. Trans. iv. 85. t. 8. f. 1–4.

Var. 1. Whitish, spotless.

Var. 2. Whitish ; back ashy.

Var. 3. Whitish ; clypeus yellowish.—*Férussac*, t. . f. 9, 10.
Limax filans, *Hoy, Trans. Linn. Soc.* i. 183.
Latham, Trans. Linn. Soc. iv. 85. t. 8. f. 1–4.

Var. 4. Whitish ; head black.

Var. 5. Whitish or grey, minutely black dotted.—*Drap. Hist.* t. 9. f. 9.

Var. 6. Reddish, with dusky spots.—*Férussac*, f. 8.

Var. 7. Rufous, black spotted.—*Férussac*, f. 7.
Limax reticulatus, *Müller, Verm.* ii. 10.

Hab. Europe ; Portugal (*Morelet*). ? N. Africa ; Egypt (*Ehrenberg*).

Limax agrestis.—Mr. Forbes figured a monstrosity with the two upper eye-bearing tentacles united into a single conical prominence. Found by Mr. Gibbs at Sandown.—*Brit. Moll.* t. I. I. I. f. 4.

Monstrosity ? — Reddish ; dorsal grey, deep and strongly marked ; shield two-lobed in front. Shell, *Férussac, l. c.* 75.

Limax bilobatus, *Férussac, Tab. Syst.* 22. 96 *e*; *Hist. Moll.* ii. 74. t. 5. f. 11.

Hab. Europe; Paris (*Férussac*).

Probably only an accidental variety of *L. agrestis*.

18. Limax sylvaticus.

Violet, not spotted; shield gibbous; body subrugose.

Limax sylvaticus, *Drap. Hist.* 126. t. 9. f. 11.
Férussac, Tab. Syst. 22. 96 *e*; *Hist.* t. 8 D. f. 2, from *Drap.*

Var. minor, *Morelet, Moll. Portugal*, 33.

Hab. France; Montpellier (*Drap.*). Var. β. Portugal, on the high mountains of Cintra (*Morelet*).

Perhaps a variety of *L. agrestis*, Férussac.

19. Limax brunneus.

Blackish, subrugose, neck longer than the shield.

Limax brunneus, *Drap. Hist.* 128.
Férussac, Tab. Syst. 23.
Bouchard-Chantereaux, Moll. Calais.
Johnston, Trans. Berw. Club, i. 154.
Gray, Man. Moll. 117.
Alder, Cat. Northumb. 32.
Forbes & Hanley, Brit. Moll. iv. 20. t. F. F. F. f. 4.
Limacella concava, *Brard, Coq. Paris.*

Hab. France; Montpellier (*Drap.*).

20. Limax tenellus.

Greenish; head and tentacles black. Length 10 inches.

Limax tenellus, *Müller, Verm.* ii. 11.
? *Drap. Hist.* 127.
Férussac, Tab. Syst. 21. 96 E.
Nilsson, Moll. Suec. 10.
Alder, Moll. Northumb. 31.
Forbes & Hanley, Brit. Moll. t. F. F. F. f. 3.
Arion tenellus, *Ray & Drouet, Moll. Champ.*

Hab. Europe: Denmark; France.

21. Limax tunicatus.

Subcylindrical, dark drab or dusky brown, sometimes almost black; shield short, rounded behind, with conspicuous interrupted concentric wrinkles; neck smooth, with an elevated

central line; back, behind the shield, marked with broken wrinkles arranged lengthwise; upper tentacles granulated, black at the top; foot very narrow.

Limax tunicata, *Gould, Invert. Mass.* 3.
Limax agrestis, *Stimpson, Shells N. England.*

Hab. N. America; Massachusetts. Under stones.

May be the same as *L. agrestis* of Europe.—*Gould.*

22. Limax andecolus.

Body rather elongate, high, striated above, pointed behind, bluish grey; mantle roundish, smooth; back shortly keeled; foot narrow. Shell depressed, thick at the tip, thin on the edge.

Limax andecolus, *D'Orb. Voy. Amér. Mérid.* 222.

Hab. Bolivia. On damp places, 2700 metres above the surface of the sea: allied to *Limax agrestis.*

23. Limax sandwichensis.

Grey; sides of foot yellowish; mantle elongate; aperture of respiration medial. Shell oblong, thin (f. 9–11).

Limax Sandwichensis, *Eydoux, Voy.*
Gray, Fig. Moll. t. 288. f. 1.

Hab. Sandwich Islands.

24. Limax Ascensionis.

Pale fulvous; edge and under side of foot yellow, lead-coloured behind; shield broad, oval, place of the shell marked by a convexity; shell small, narrow, ovate, acute, rather curved.

Arion ascensionis, *Garnot & Lesson, Voy. Coq. Moll.* t. 16. f. 4.
Limax ascensionis, *Quoy & Gaim. Voy. Astrol.* t. . f. 14, 18.
Mrs. Gray, Fig. Moll. t. . f. .

Var. Black beneath.

Hab. Ascension. Under stones at the top of the mountain.

"Subcaudal gland none." In the figure the shield is ovate elongate, the aperture of respiration central.

Doubtful species.

25. Limax lævis.

Black, smoothish.

Limax lævis, *Müller, Verm.* 10.

Hab. Europe.

26. Limax gracilis.

Slender, head and lower tentacles fulvous, upper tentacles brown; mantle dark fulvous; back brown, smooth; tail keeled.

Limax (Deroceras) gracilis, *Rafin. Ann. Nat.* 1820.
Férussac, Tab. Syst. 23.
D'Orb. Voy. Amér. Mérid. 221.

Hab. N. America; Kentucky. In woods.

27. Limax cinctus.

Yellowish; shield and abdomen girt with grey. Length 2 inches.

Limax cinctus, *Müller, Verm.* 9.
Férussac, Tab. Syst. 24.

Hab. ——?

28. Limax fuscus.

Reddish: lateral and dorsal line blackish.

Limax fuscus, *Müller, Verm.* 11.
Férussac, Tab. Syst. 23.

Hab. Europe (*Müller*).

29. Limax hyalinus.

Hyaline; tentacles obsolete, with brown lines from the tentacles to the shield.

Limax hyalinus, *Linn. Syst. Nat.* xii. 1081.
Férussac, Tab. Syst. 24.

Hab. Europe. In moss: probably young.

30. Limax scopulorum.

Ash; back brown, smooth; body ash; shield and attenuated back black.

Limax scopulorum, *Fab. Voy. Norveg.* 298.
Férussac, Tab. Syst. 24.

Hab. Norway, in cracks in the rocks.

31. Limax campestris.

Limax campestris, *Binney, Proc. Bost. Soc. N. H.* 1841, p. 51.

Hab. N. America.

32. Limax carinatus.

Body rounded in front, strongly keeled and acute behind; uniform deep black; epidermis blackish; foot blackish grey.

Limax carinatus, *Risso, Eur. Merid.* iv. 56 (not *D'Orb.*).

Hab. South of Europe; Nice. Spring and autumn.

33. Limax lineolatus.

Body rugose, blackish, marked with grey lines, rounded in front, gradually keeled behind; upper tentacles bluish; foot edged with yellowish grey.

Limax lineolatus, *Risso, Eur. Merid.* iv. 57.

Hab. S. Europe; Nice. Under stones, December.

2. MILAX.

Back keeled from the end of the mantle. Mantle short, granular, truncated behind, with two small pores on its hinder edge.

Shell oval, thick, convex beneath.

Shield with two small pores on its hinder edge, and with a deep groove round the shell; *vermiculated* like the *Arions*: for these reasons Férussac thought it might make a particular subgenus.—*Férussac, Tab. Syst.* 22.

What is the genus Aspidoporus, *Fitz. Verz.* 90, 1833; *Herm. Ind.* i. 395, iii. 13? I have not been able to see the work: is it intended for this genus—as the name probably implies pores on the shield?

1. Milax Gagates. B.M.

Blackish, grey brown or greenish; shield rounded behind, granular or shagreened, surrounded by a deep marginal groove; back keeled the whole length from the back of the shield to the tail.

Shell elongate, small.—*Férussac, Hist. Moll.* 76.

Limax gagates, *Drap. Tabl.* 100; *Hist.* 122. t. 9. f. 1, 2.
Férussac, Tab. Syst. 22. 96 E; *Hist. Moll.* 75. t. 6. f. 1, 2.
Philippi, Mol. Sicil. ii. 102.
Norman, Zoologist, 1853, Sept. p. 4048.
Clark, Ann. & Mag. N. H. xii. 339. t. 12. f. 16–21.
Forbes & Hanley, Brit. Moll. iv. 24. t. D. D. D. f. 63.
L. cinereus, *Blainv. D. S. N.* xxvi. 430.

Var. 1. Black, shining.

Var. 2. Lead-coloured or grey-black.—*Férussac, l. c.* t. 6. f. 1, 2.

Hab. Europe: South of France; Malta; Spain; Sicily.

"*Back* carinated throughout; shield granulated, olivaceous black, with paler sides. *Head* bluish; tentacles darker, particularly the superior, which are deep violet. *Shield* ample, squarish, bilobed behind (being indented by the keel in the centre), granulated, same colour as the rest of the body. *General colour* very deep olive, or olivaceous black, becoming lighter at the sides, so that the *margin of the foot* is very pale, except near the tail, where it is darker; sole nearly white. *Keel* extending the whole length of the back, sharply edged; the edge somewhat darker than the rest of the body. *Mucus* colourless, abundant. Length rather less than 3 inches. When at rest assumes a rounded form, the head, tentacles, and even a portion of the foot being retracted beneath the shield.

"*Hab.* Isle of Portland (*Darbyshire*); near Tenby, S. Wales."

2. Milax Sowerbii. B.M.

Yellowish, tessellated with brown; head, tentacles, back, and dorsal keel yellow, sides pale. Shell oval, thickened and very convex beneath.

Limax Sowerbii, *Fér. Tab. Syst.* t. 96 E; *Hist. Moll.* t. 8 D. f. 5, 6.
Alder, Mag. Zool & Bot. ii. 105.
Clark, Ann. & Mag. N. H. xii. 338. t. 12. f. 14, 15.
Denson, Mag. Nat. Hist. vi. 694.
Forbes & Hanley, Brit. Moll. iv. 22. t. E. E. E. f. 3.
Limax carinatus, *Leach, MSS.*; *Brit. Moll.* 54. t. 8. f. 3.
Alder, Mag. Zool. & Bot. ii. 105.
Gray, Turt. Man. ed. 2. 116. t. 3. f. 17.
Limax marginatus, *Drap. Hist. Moll.* 124. t. 9. f. 7 (not *Müller*).
Fér. Tab. Syst. t. 96 E; *Hist. Moll.* ii. t. 8 D. f. 4 ?

Hab. Europe, England: France.

Perhaps a variety of *M. Gagates.*

3. Milax valentianus.

Brown (in spirits); back and shield with two pale broad-edged black streaks; dorsal keel white; shield short, rather truncated behind; aperture of respiration posterior.

Limax Valentianus, *Férussac, Tab. Syst.* 21. t. 96 E; *Hist. Moll.* ii. 2. t. 8 A. f. 5, 6.

Hab. Spain; Valencia, in gardens.

4. Milax cristatus.

Greyish olive, reticulated with black; back entirely keeled; head and tentacles black; tail compressed, rather blunt; mucus deep yellow.

Krynickellus cristatus, *Kaleniczenko, Bull. Soc. Nat. Mosc.* 1851, p. 225. t. 5. f. 1.

Hab. Southern Tauria, near Otuz.

Dr. Kaleniczenko has referred *Limax megaspidus*, Blainville, to this species; but the original specimen from which that species was described by M. de Blainville, in the British Museum, has a rounded and not a keeled back.

5. Milax carinatus.

Body elevated, compressed, bluish grey above, rugose, grooved; mantle oblong, rugose, elevated in the middle, showing the situation of the shell; back keeled to the mantle.

Shell ——?

Limax carinata, *D'Orb. in Webb & Berth. Canar. Moll.* 47. t. 3. f. 4–8.

Gray, Fig. Moll. t. 284. f. 4.

Limax cinereus, *Ledru, Voy. Teneriffe*, i. 186, 1810.

Hab. Teneriffe: suspends itself by a thread.

In the figure the mantle is rounded at each end, and the respiratory hole is nearly central.

6. Milax virescens.

Body above green-brown, smoothish; shield very smooth, anterior; back keeled. Shell oblong, very thin, near the apex rather convex.—t. 8. f. 2.

Parmacella virescens, *Schultz in Philippi, Moll. Sicil.* i. 125. t. 8. f. 2, shell.

Limax virescens, *Philippi, Moll. Sicil.* ii. 103.

Hab. Sicily; Panormo.

7. Milax nigricans.

Body above black, nearly smooth, beneath brown; shield rugose, anterior; back keeled. Shell irregular, thick, rugulose, flattish.

Parmacella nigricans, *Schultz in Philippi, Moll. Sicil.* i. 125. t. 8. f. 1, shell.

Limax nigricans, *Philippi, Moll. Sicil.* ii. 102.

Hab. Sicily; Parnormo.

8. Milax umbrosus.

Body rugose, above brown and white variegated, beneath white, spotless; clypeus anterior; head nearly entirely retractile under the shield; tail strongly keeled above; aperture of respiration on the hinder part of the shield. Shell ovate-oblong, very thin, flattish, rather thickened near the tip.

Parmacella variegata, *Philippi, Moll. Sicil.* i. 128.
Limax umbrosus, *Philippi, Moll. Sicil.* ii. 102.
Hab. Sicily.

9. Milax antipodarum. B.M.

Ovate, attenuated, rugose (in spirits), brown, back sharply keeled to the shield; back with parallel grooves diverging from the shield, with short straight branches passing across from one to the other; shield oblong, short, rounded behind, smooth, with netted grooves; breathing hole rather behind the middle of the right side; foot in three bands, the central band rather the broadest, with series of grooves on each side from a zigzag central groove, the side bands with close, parallel, straight cross grooves.

Hab. New Zealand.

3. PHOSPHORAX.

Body thick, broad; the hinder part of the mantle with a marginal disk formed of part of the mantle, which is lucid green and phosphorescent in the dark. Tail rounded. "Aperture for generation and respiration like *Arion*," according to the figure rather in front of the middle of the mantle. Shell rudimentary under the mantle, as in *Limax*.

Phosphorax (noctilucus), *Webb & Berth. Ann. Sci. Nat.* 1833. xxviii. 307.
Gray, P. Z. S. 1847, 169. 430.
Limax, sp., *D'Orb. in Férussac, Moll. Terr.* 76. t. 2. f. 8.
Philippi, Handb. Conch. 238.

It is doubtful whether this genus belongs to *Arionidæ* or *Limacidæ*. It appears to have some affinity to the preceding genus, which has induced me to place it here rather than in the former family.

"*Limax noctilucus* is furnished with a similar aperture in the mantle as that in *Arion extraneus*, from whence escapes a phosphorescent matter."—*Férussac, Bull. Sci. Nat.* 1827, x. 300.

1. Phosphorax noctilucus.

Shell thick, oval, white, nearly transparent, smooth above, crystalline beneath.

Limax noctilucus (L. phosphorescente), *D'Orbigny in Férussac, Hist. Moll.* ii. 76. t. 2. f. 8.

Phosphorax noctilucus, *Webb & Berth. Ann. Sci. Nat.* xxviii. 307.

Hab. Teneriffe.

4. MALINO.

Body slender, obtusely keeled, ending in an acute prism. Head produced. Shield large, anterior, oblique, longitudinally grooved; front part much produced, concentrically grooved, very contractile, very mobile, and moves rapidly from left to right and *vice versâ* as the animal walks. Orifice of respiration large, rather behind the middle of the shield. Shell (quite hidden) not described.

1. Malino lombricoides.

Slender, flesh-coloured, black-dotted; body rather rugose; shield grooved. Shell not described.

Limax lombricoides, *Morelet, Moll. Portugal*, 39. t. 3. f. 4.

Hab. Portugal.

Form like *Limax agrestis*; very vivacious; singularly elongates the head when walking.

The genus Oris of Risso (*Eur. Mérid.* iv. 57), arranged by him in *Limacides*, appears to be a marine animal with four small, not entirely retractile tentacles on the front of the back, and the eyes placed rather above and near the base of the front tentacles. The body is subcylindrical, soft, rather truncated in front, pointed behind, and covered with a very smooth semitransparent fleshy mantle, which edges the foot and covers the head when retracted.

Oris Ferussaci.

Hab. Nice. In spring, at moderate depth (in the sea?).

This is evidently not a *Limacid*, from the position of the eyes and the form of the mantle; and the combination of characters is so extraordinary, that it requires further examination before it can be referred to any other family.

II. Cochleophora. *Body more or less spiral, prominent on the (middle generally) upper surface of the foot, and covered with a more or less spiral shell sometimes partly hidden by the reflexed part of the produced edge of the mantle.*

a. *Body and mouth of the shell depressed, being broader from side to side than long from front to back, that is to say, in the direction of the axis of the spiral shell.*

Tribe 3. PELTELLINA.

Animal elongate, slug-like. Body subcentral, dorsal. Mantle enclosed, and the size of the shell in front, produced behind, and reflected over the back of the shell. Shell flat, ear-shaped, thin.

1. PELTELLA.

Animal elongate, slug-like, not capable of being withdrawn into the shield. Body elongate, ending in an elongated prism behind, without any posterior pore. Shell oblong, flat, more or less spiral, very thin.

Parmacellus, *Férussac, Tab. Syst.* 10. 24. 96ª; *Hist. Moll.*
Parmacella A, *Blainv. Man. Malac.* 463.
Parmacella, sp., *Philippi, Handb. Conch.* 240.
Peltella, *Van Beneden & Robb, Guérin Mag. Zool.* 1836, t. 75.
Pectella, *Gray, P. Z. Soc.* 1847, 170 (misprint).

Férussac's character of the genus *Parmacellus* is taken from *P. palliolum*, which is quite distinct as a genus from *P. Olivieri* of Cuvier.

1. Peltella palliolum. B.M.

Green; shell green, depressed; spire very small; aperture very large.

Parmacellus palliolum, *Férussac, Tab. Syst.* 25.
Parmacella palliolum, *Férussac, Hist. Moll.* ii. t. 7 A. f. 1–9.
Moquin-Tandon, Mem. Acad. Torin. 1850; *Journ. Conch.* ii. 146, 1851.
Parmacella Taunaisii, *Blainv. Man. Malac.* 463, 1825.
Peltella palliolum, *Van Beneden, Mag. Zool.* 1836.
Hab. Brazils (*Taunay*).

Tribe 4. VITRININÆ.

The mantle produced and thickened in front beyond the front edge of the shell, forming a thick fleshy corrugated collar.

Vitrinina, *Gray, Turton's Man.* ed. 2. 109, 1840; *P. Z. S.* 1847, 170.
Vitrinoidea, part., *Fitz.*

Synopsis of Genera.

1. Helicolimax. Mantle covering nearly the whole of the shell.

2. Vitrina. Mantle covering the front edge of the last whorl and a part of the spire of the shell.

3. ? Simpulopsis. Animal ——. Shell half ovate, very thin, membranaceous. Whorls three or three and a half; last ventricose. Aperture large, oblong or rounded, oval.

1. HELICOLIMAX.

Mantle produced before and behind so as to cover nearly the whole of the shell when fully expanded. Shell depressed, thin. Whorls rapidly enlarging. Mouth very large. Columella with a wide membranous margin.

1. Helicolimax Lamarckii. B.M.

Shell depressed, oval, smooth, thin, bright, greenish-horny; spire nearly level; whorls two and a half, rapidly increasing, internal margin free; aperture ample, nearly horizontal, ear-shaped; peristome simple, upper margin arched-dilated in front, columellar widely membranous-margined. Lat. maj. 15, min. 10, alt. 5½ mill.

Helicolimax Lamarckii, *Fér. Pr.* v. 21; *Hist.* t. 9. f. 9.
Lowe in Zool. Journ. iv. 338. t. suppl. 38.
Vitrina Lamarckii, *Gray, Ann. Phil.* 1825, ix. 409.
Lowe, Faun. Mader. 40. t. 5. f. 1.
Webb & Berth. Syn. p. 311.
Orb. Canar. p. 53.
Beck, Ind. p. 2. n. 13.
Pfr. Mon. Helic. ii. 506; *Icon.* t. 1. f. 48–51.
Desh. Helic. 96. 20 F. n. 8. t. 8. f. 22, 26.
Vitrina Teneriffæ, *Quoy & Gaim. Astrol.* ii. 142. t. 13. f. 4–9.
Lam. ed. *Desh.* vii. 729. n. 4.
Vitrina Cuvieri, *Sow. Gen.* f. 2 (*Lowe*).
Hab. Canaries; Teneriffe; Madeira.

"In its natural condition the *shell* is perfectly concealed by the cuirass, in which state the animal has exactly the aspect of a *Limax* with a very tumid, uneven, large raised cuirass, and thus it is always found in its places of retreat under stones, when moist and in a healthy condition. Removed from its natural abode, or after exposure to a free circulation of air, there soon appear, first a *sinus*, then a deep wide slit up the posterior half of what appeared before to constitute a uniform tumid cuirass. Through this opening appears the *shell*, the back part of whose last volution, as the animal becomes more and more dry, is gradually more exposed by the enlargement of the sinus which dilates more particularly on the left side, till finally the whole shell is exposed, with the exception of about a line's breadth of the outer lip, covered by a narrow portion of the cuirass like a border, which becoming broader towards the right side, extends backwards and partly over the spire in a kind of broad lateral lobe. The animal is even sometimes completely retracted within the shell, like a *Helix*; and had I not observed in the same individuals the whole process of transition, from the aspect of a *Limax* without the slightest appearance of external shell, to that of a *Helix* completely contained within one, the identity of the individuals in the two states would have seemed most questionable.

"The posterior extremity is acuminated, pointed, triangular when the animal is at rest, elongated when in motion, convex and carinated down the middle. The keel is formed by the opposition of the two lips of skin which form the edges of the bed in which the posterior part of the shell is sunk, and which thus, while giving the appearance of a keel, form in reality a close channel or groove. This is continued a part of the way down, but not to the extremity. The oblique grooves before mentioned on these lips of skin are continued on each side to the extremity of the tail, dividing it into compartments on each side. There is no appearance of a terminal mucous pore.

"The head, neck, and tentacula of the animal are granulated; with two very distinct grooves close together down the middle of the neck, beginning between the upper pair of *tentacula* and an intermediate raised black granulated line. The cuirass is strongly wrinkled concentrically, like the lines at the ends of the fingers. The sides of the posterior extremity are, as before described, divided into regular compartments by equidistant lines running obliquely from the closed groove or keel down its centre to the edge.

"The general ground-colour of the animal is either cinereous or a very pale reddish brown; the *tentacula* and fore part of the head and neck rendered dusky by the dark granulations. The cuirass is more or less mottled by large confluent, often distinct,

black or dark brown spots or patches. The posterior extremity is of a uniform dusky brown, sometimes olivaceous. The sides are pale cinereous brown. The cuirass and posterior extremity are sometimes also sprinkled with minute, opake, milky dots.

"The animal is very slightly viscous; the *mucus* is hyaline. Length of the largest specimen seen, $1\frac{1}{2}$ inch; of this the tail was $\frac{1}{2}$ an inch. It is found of all sizes, from this to $\frac{1}{4}$ of an inch in length; the usual size is that of the specimen figured. When the animal is at rest, the cuirass occupies two-thirds of the whole length; when it is crawling, about three-fifths of it; the neck and tail then extending each about one-fifth beyond it.

"When in motion it crawls with great activity. Contrary to any other of its tribe that I am acquainted with, if disturbed or irritated, it only crawls the faster; and if at rest and contracted, it directly puts itself in motion on being touched or disturbed." —*Lowe.*

2. VITRINA.

Mantle produced and covering the front edge of the last whorl and a part of the spire of the shell. Shell depressed, thin. Whorls two or three, rapidly enlarging, last dilated. Mouth very large. Peristome thin. Columellar edge thin, arched.

Vitrina, *Drap. Tabl.* 33. 98, 1801; *Hist.* 23. 30. 119, 1803.
Lamk. Phil. Zool. 1809; *Hist. A. s. V.* vi. 52.
Fleming, B. A. 255. 267, 1828.
Albers, Heliceen.
Semilimax, *Férussac, Essai d'une Méthod.* 1802.
Helicolimax, *Férussac, Essai*, 1807; *Prod.* 21, 1819; *Hist. Moll.* 31, 1821.
Rang, Man. 157, 1829.
Helicolimax A, *Blainv. Man. Malac.* 462.
Cobresia, *Hübner, Monog. v. Test.* 1810.
Studer, Coxe's Trav. Switz. 1789.
Vitrinus, *Montf. Conch. Syst.* ii. 238, 1810.
Hyalina, *Studer, Syst. Verz.* 11, 1820.
Limacina, *Hartmann, N. Alpina*, i. 206, 1821; *in Sturm, Fauna*, vi. 41.

The animal of *Vitrina* is intermediate in form between a slug (*Limax*) and a snail (*Helix*), having the shield-like mantle of the one and the globular external shell of the other. It can draw itself into the shell so as entirely to hide itself like the Snails.

a. *European.*

1. VITRINA PELLUCIDA. B.M.

Shell rather convexly-depressed, nearly smooth, very bright, pellucid, berylline; spire moderate, slightly prominent; suture a little crenulated, concolorous or reddish; whorls three, rapidly increasing, slightly convex, the last wide beneath, nearly level, impressed in the middle, slightly membranous-margined; aperture oblique (45°), lunate-rounded, as wide as it is high; peristome slightly inflected, regularly arched on each side. Lat. 6 by $4\frac{2}{3}$, alt. $3\frac{1}{2}$ mill,

Helix pellucida, *Müll. Verm.* ii. 15. n. 215.
Dillw. Descr. Cat. ii. 947. n. 134.
Cuvier, Règne Animal, ii. 405.
Helix limacoides, *Alten*, p. 85. t. 11. f. 20.
Vitrina beryllina, *C. Pfr.* i. 17. t. 3. f. 1; iii. 55.
Beck, Ind. p. 1. n. 4.
Vitrina pellucida, *Rossm.* i. 74. f. 28.
Charp. Cat. Moll. Suisse, p. 2.
Beck, Ind. p. 1. n. 5; & *M. R. C.* (ined.) viii. t. 1. f. 1.
Reeve, Conch. Syst. ii. t. 162. f. 1.
Pfr. Mon. Helic. ii. 492. n. 1; *Icon.* t. 1. f. 14–17.
Desh. 96 [14]. n. 1.
Vitrina Mülleri et Dillwynii, *Jeffr. Linn. Trans.* xvi. pt. 2. p. 326?
Cobresia helicoides vitrea, *Hübner* (teste *Fér.*).
Vitrinus pellucidus, *Montf. Conch.* ii. 239.
Hyalina pellucida, *Stud. Verz.* p. 11.
Limacina pellucida *a*, *Hartm. in Neue Alpina*, i. 246.
Helicolimax pellucida, *Fér. Pr.* 7; *Hist.* t. 9. f. 6.

Hab. Germany; Switzerland; France; Britain; Sweden, &c.

2. VITRINA ANNULARIS. B.M.

Shell depressedly-globose, thin, nearly smooth, pellucid, bright, greenish-hyaline; spire slightly prominent, obtuse; whorls three, gradually increasing, the last rounded, wide at the base; aperture scarcely oblique, oval-rounded; peristome simple, columellar margin short, nearly vertical. Lat. 4 by 3, alt. $2\frac{3}{4}$ mill.

Hyalina annularis, *Stud. Verz.* 11.
Limacina annularis, *Hartm. in Neue Alpina*, i. 246.
Helicolimax annularis, *Fér. Pr.* 8; *Hist.* t. 9. f. 7.
Vitrina annularis, *Gray, Ann. Phil.* new ser. ix. 409.
Charp. Cat. Moll. Suisse, p. 2.
Beck, Ind. p. 1. n. 7.
Pfr. Mon. Helic. ii. 493. n. 2; *Icon.* t. 1. f. 26, 29.
Desh. 96 [16]. n. 2.

Vitrina subglobosa, *Mich. Compl.* 10. t. 15. f. 18–20.
Morelet, Moll. du Port. 50.

Hab. Swiss and French Alps; Portugal.

3. Vitrina Draparnaldi. B.M.

Shell depressed, thin, smooth, very bright, pellucid, hyaline- or lutescent-green; spire very short; apex scarcely prominent; suture scarcely impressed, thread-margined; whorls three and a half, rapidly increasing, the last depressed, elongated in front, rather broad at the base, nearly plane, scarcely membranous-margined; aperture very oblique, transversely lunar, wider than high; peristome thin, columellar margin short, basal rather straight. Lat. 8 by $6\frac{1}{3}$, alt. $3\frac{3}{4}$ mill.

Helix Draparnaldi, *Cuvier, Règne Animal*, ii. 405.
Helix diaphana, *Poir. Coq. Fluv. et Terr.* 77.
Helix elliptica, *Brown in Wern. Trans.* ii. 523. t. 24. f. 8?
Vitrina pellucida, *Drap. Tabl. d. Moll.* p. 98. n. 1 (not *Müll.*); *Hist.* 119. t. 8. f. 34–37.
Brard, 78. t. 3. f. 3–6.
Lam. vi. 2. n. 1. p. 53; ed. *Desh.* vii. 728.
Guérin, Icon. Moll. t. 5. f. 3.
Desh. Enc. Méth. iii. 1133. n. 1.
Gray, Manual, 120. t. 3. f. 21.
Vitrina diaphana et depressa, *Jeffr. Linn. Tr.* xvi. pt. 2. p. 326?
Vitrina Draparnaldi, *Leach, Moll.* 80.
Pfr. Mon. Helic. ii. 493. n. 3; *Icon.* t. 1. f. 18–21.
Desh. 96 [16]. n. 3.
Vitrina major, *C. Pfr.* i. 47.
Vitrina Audebardii, *C. Pfr.* iii. 55.
Beck, Ind. p. 1. n. 3.
Limacina pellucida β., *Hartm. in Neue Alpina*, i. 246.
Helicolimax major, *Fér. Essai*, 43.
Helicolimax Audebardi, *Fér. Pr.* 6; *Hist.* t. 9. f. 5.
Helicolimax pellucida, *Blainv. Dict. Sc. Nat.* 255. t. 32.
Sow. Conch. Man. f. 263.

Hab. France and Britain.

4. Vitrina diaphana.

Shell depressed, thin, smooth, bright, diaphanous, greenish-hyaline; spire minute, nearly level; whorls two and a half, rapidly increasing, nearly level, the last dilated, depressed, very narrow below, dilated at the deciduous, membranous margin; aperture nearly horizontal, very ample, ear-shaped; columellar margin exceedingly arched. Lat. $6\frac{1}{2}$ by $4\frac{1}{2}$, alt. 3 mill.

Vitrina diaphana, *Drap. Hist.* 120. t. 8. f. 38, 39.
C. Pfr. i. 48. t. 3. f. 2; iii. 55.
Rossm. i. 73. f. 27.
Charp. Cat. Moll. Suisse, p. 2.
Beck, Ind. p. 1. n. 2.
Lam. ed. *Desh.* vii. 728. n. 2.
Pfr. Mon. Helic. ii. 494. n. 4; *Icon.* t. 1. f. 30–33.
Desh. 96[17]. n. 4.
Vitrina pellucida, *Voith. in Sturm, Fauna*, vi. H. 3. t. 16.
Blainv. Malac. 462. t. 41. f. 1.
Cobresia limacoides patera, *Hübner* (*Fér.*).
Hyalina vitrea, *Studer, Verz.* 11.
Limacina vitrea *a*, *Hartm. in Neue Alpina*, i. 246.
Helix limacina, *Alten*, 81. t. 10. f. 19.
Helix virescens, *Studer in Coxe's Travels.*
Helix palliata, *Hartm. in Alpina*, ii.
Helicolimax vitrea, *Fér. Pr.* 5; *Hist.* t. 9. f. 4.
β. Vitrina balina, *Ziegler*, olim.
γ. Smaller.
Vitrina nivalis, *Charp. MSS.*
Hab. Germany; Switzerland; France.

5. VITRINA PYRENAICA.

Shell depressed, oval, shining, hyaline-green; whorls two and a half, rapidly increasing, the last depressed, narrow at the base, surrounded by a very narrow membrane; aperture horizontal, nearly regularly oval, with a very thin callus inside, margins approximate, dilated above the middle, subinflected, columellar slightly arched. Lat. 6 by 4, alt. $2\frac{1}{3}$ mill.

Helicolimax pyrenaica, *Fér. Pr.* 4; *Hist.* t. 9. f. 3.
Vitrina pyrenaica, *Gray, Ann. Phil.* new ser. ix. 409.
Pfr. Mon. Helic. ii. 495. n. 5; *Icon.* t. 1. f. 34–37.
Desh. 96[15]. n. 5.
Hab. Pyrenees; Valle Ossau, near the Pic du Midi.

6. VITRINA ELONGATA. B.M.

Shell much depressed, ear-shaped, very thin, smooth, bright, lutescent-hyaline; spire punctiform, scarcely prominent; whorls scarcely two, the last elongated in front, linear at the base, dilated at the rather broad, membranous margin; aperture almost horizontal, oblong-oval, margins approximate, recurved above. Lat. $4\frac{1}{4}$ by 3, alt. $1\frac{1}{3}$ mill.

Vitrina elongata, *Drap. Hist.* 120. t. 8. f. 40–42.
C. Pfr. i. 48. t. 3. f. 3; iii. 55.
Rossm. i. 73. f. 26.
Beck, Ind. p. 1. n. 1.
Lam. ed. *Desh.* vii. 729. n. 3.
Pfr. Mon. Helic. ii. 495. n. 6; *Icon.* t. 1. f. 38–41.
Desh. 96 [19]. n. 6.
Helix semilimax, *Fér. Pat. in Naturforscher*, 1802, St. 19. t. 1. f. A, D.
Testacella Germaniæ, *Oken, Lehrb. d. Naturg.* iii. 312.
Hyalina elongata, *Stud. Verz.* 11.
Limacina vitrea β, *Hartm. in Neue Alpina*, i. 246.
Limacina elongata, *Hartm. in Sturm, Fauna*, vi. H. 5. p. 54.
Helicolimax elongata, *Fér. Pr.* 1; *Hist.* t. 9. f. 1.
β. Helicolimax brevis, *Fér. Pr.* 2; *Hist.* t. 9. f. 2.
Vitrina brevis, *Gray, Ann. Phil.* new ser. ix. 408.

Hab. Germany and France, rather rare.

7. Vitrina glacialis.

Shell hyaline, flattened above; whorls two; aperture very patent, ovate-oblong. Lon. $\frac{1}{5}$, lat. $\frac{1}{8}$″.

Vitrina glacialis, *Forbes in Jard. Mag.* 1837.
Wiegm. Arch. 1838, ii. 273.
Pfr. Mon. Helic. ii. 496. n. 7.

Hab. Switzerland.

8. Vitrina Musignani.

Shell subglobose, pellucid, hyaline, finely and elegantly striated longitudinally; whorls three, the last rather large, slightly keeled; aperture rounded; spire very little exserted.

Vitrina Musignani, *Mandral. in Giorn. Lett.* n. 230.
Arad. e Magg. Cat. rag. 113.
Phil. Sicil. ii. 216.
Pfr. Mon. Helic. ii. 496. n. 8.

Hab. Sicily.

9. Vitrina Maravignæ.

Shell depressed, slightly convex, oval, horny-green, thin, bright, subpellucid, umbilicated, longitudinally striated; whorls two and a half, the last much produced; aperture very ample, exceedingly oblique, subovate. Lon. $2\frac{1}{4}$, lat. $1\frac{3}{4}$ lin.

Vitrina Maravignæ, *Mandral. Moll. Madon.* 11.
Piria e Scacchi, Antol. i. 124, 1841.
Arad. e Magg. Cat. rag. 114.
Phil. Sicil. ii. 216.
Pfr. Mon. Helic. ii. 496.

Hab. Nebrodian Mountains, Sicily.

b. *Asiatic—Continental.*

10. VITRINA GIGAS.

Shell rather solid, depressed, with arched striæ, obsoletely and irregularly decussated by spiral lines, olive-horny; spire minute, level; suture impressed; whorls two and a half, rapidly increasing, the last slightly depressed above, outline rounded, base narrow; aperture very oblique, large, regularly transversely oblong, slightly callous inside, margins nearly contiguous, upper and lower rather straight, columellar slightly arched. Lat. 30 by 18, alt. 13 mill.

Vitrina gigas, *Benson in Journ. As. Soc.* v. 350.
Pfr. Mon. Helic. ii. 496. n. 10.

Hab. Bengal.

11. VITRINA CASSIDA.

Shell depressed, thin, slightly striated, scarcely shining, not quite diaphanous, with the periphery ovate, pale greenish horn-coloured; spire very shortly conoidal; suture slightly bordered; whorls nearly five, enlarging rapidly, the last rounded, somewhat depressed, broad beneath and impressed in the centre; aperture very oblique, lunarly ovate, pearl-shining within; peristome simple, upper margin a little dilated forwards, basal margin slightly arched, columellar margin slightly callous. Height 12, greatest breadth 26, least breadth 22 mill. (*Pfr.*)

Vitrina cassida, *Hutt., Pfr. Mon.* ii. 497. n. 12; *Suppl.* 2; *Icon.* t. 2. f. 3–5.

Hab. Simla, Western Himalaya.

12. VITRINA PRÆSTANS. B.M.?

Shell depressed-semiglobose, thin, striatulate, slightly decussated by rather distant spiral lines, scarcely shining, pale horny; spire not prominent; suture very lightly impressed; whorls three, rapidly increasing, the last convex above, outline subdepressed, base rather wide; aperture very oblique, subtriangular-semioval; peristome simple, slightly inflected, margins approximate, columellar receding, very arched. Lat. maj. 20, min. 16, alt. 10 mill.

Vitrina præstans, *Gould in Bost. Journ.* iv. 456. t. 24. f. 2.
Pfr. Mon. Helic. ii. 497. n. 13.

Hab. Tavoy, Birmah.

13. VITRINA MONTICOLA. B.M.

Shell depressed, thin, striatulate, shining, pellucid, lutescent-horny; spire plane, scarcely prominent in the middle; suture lightly impressed; whorls four, rapidly increasing, nearly level, the last depressed, not descending; aperture oblique, rounded-lunar; peristome simple, margins connivent, united by a very thin callus, arched-dilated above in front, the columellar forming an obtuse angle with the basal. Lat. 18 by 14, alt. 7½ mill.

Vitrina monticola, *Benson, MSS.*
Pfr. in Proc. Zool. Soc. 1848; *Mon. Helic.* ii. 497; *Icon.* t. 2. f. 6-8.

Hab. Bengal; Landour; Himalaya; Almorah.

14. VITRINA BENSONI.

Shell slightly depressed, thin, striatulate, bright, pellucid, pale horny; spire scarcely elevated, obtuse; suture impressed, slightly margined; whorls three and a half, slightly convex, the last rather depressed, rounded at the periphery, wide at the base; aperture oblique, lunate-subcircular; peristome simple, slightly inflected, margins connivent, rather dilated in front above, columellar receding, much arched. Lat. maj. 12, min. 9½, alt. 6 mill.

Vitrina Bensoni, *Pfr. in Proc. Zool. Soc.* 1848; *Mon. Helic.* ii. 497. n. 14.

Hab. E. Indies.

15. VITRINA BIRMANICA.

Shell depressed, transversely ovate, very thin and smooth, bright, luteous-green; spire scarcely elevated; whorls four, rapidly increasing, scarcely convex, disunited at the impressed suture, the last subplanulate at the base; aperture very oblique, widely lunate-oval; peristome acute, dextral margin arched in front. Lat. maj. 9⅓, min. 7¾, alt. 4⅔ mill.

Vitrina birmanica, *Phil. in Zeitschr. f. Mal.* 1847, p. 65.
Pfr. Mon. Helic. ii. 498.

Hab. Near Mergui, Birman Empire.

16. VITRINA GRUNERI. B.M.

Shell globose-depressed, very smooth, dull, olive-horny; spire scarcely raised; suture white-margined; whorls three and a half,

slightly convex, the last rather depressed; aperture very oblique, lunate-oval; peristome simple, margins connivent, columellar arched, subinflected. Lat. maj. 8, min. 6, alt. 5 mill.

Vitrina Grüneri, *Pfr. Symb.* iii. 81; *Mon. Helic.* ii. 498.

Hab. Arabia.

17. VITRINA BACCATA.

Shell small, thin, fragile, diaphanous and pale; whorls apparently only one, or at all events the body whorl may be said to constitute the whole shell; aperture nearly circular, lips scarcely interrupted, slightly thickened and partially reflected; surface of the shell polished, finely striated by minute lines of growth, and ornamented with longitudinal bead-like lines or strings of minute bubbles, which can be seen only under a strong lens; upper side depressed, flattened; under side rounded, ventricose. Length 1½ line. (*Hutton.*)

Vitrina baccata, *Hutton in Journ. As. Soc.* July 1849, p. 650.
Pfr. Mon. Suppl. 2.

Hab. Melmandeh, between Kopik Pass and Candahar, Afghanistan.

c. *Asiatic—Insular.*

18. VITRINA CUMINGI.

Shell depressed-globose, very thin, finely striated, bright, whitish horny; spire very short, obtuse; suture smooth, bordered by an impressed line; whorls four, scarcely convex, the last inflated, subdepressed, zoned in the middle by a rufous line; aperture rather oblique, lunate-rounded; peristome simple, margins remote, columellar subvertical, slightly arched, rather reflected above, resembling a punctiform perforation, scarcely arched above in front. Lat. maj. 20, min. 17, alt. 12 mill.

Vitrina Cumingi, *Beck, MSS.*
Pfr. in Proc. Zool. Soc. 1848; *Mon. Helic.* ii. 498. n. 17; *Icon.* t. 2. f. 1, 2.

Hab. Bohol, Philippines.

19. VITRINA BICOLOR.

Shell subglobose, thin, rather smooth, very bright, whitish-pink; spire short, convex, obtuse; suture impressed; whorls three and a half, rapidly increasing, the last inflated, hyaline in front, rather narrow at the base, membranous-margined; aperture scarcely oblique, lunate-rounded; peristome very thin, dex-

tral margin regularly rounded, columellar receding, much arched. Lat. maj. 18, min. 14, alt. 10 mill.

Vitrina bicolor, *Beck, MSS.*

Pfr. in Proc. Zool. Soc. 1848; *Mon. Helic.* ii. 499.

Hab. Guimaras, Philippines.

20. VITRINA GUIMARASENSIS.

Shell depressed-semiglobose, thin, striatulate, subdiaphanous, greenish-pink; spire rather small, slightly elevated; suture margined; whorls scarcely four, nearly level, very rapidly increasing, the last inflated, subdepressed; aperture oblique, lunate-subcircular, as high as wide, slightly pearly within; peristome very thin, dextral margin regularly arched, columellar receding, much arched. Lat. maj. 15, min. 11½, alt. 8 mill.

Vitrina guimarasensis, *Pfr. Proc. Zool. Soc.* 1848; *Mon. Helic.* ii. 499.

Hab. Guimaras, Philippines.

21. VITRINA BECKIANA.

Shell depressed-globose, circuit oval, very thin, striatulate, pellucid, bright, very pale rubelline-horny; spire moderate, short, obtuse; whorls nearly four, very slightly convex, rapidly increasing, the last subdepressed, wide at the base; aperture rather oblique, lunate-rounded, wider than high; peristome simple, margins remote, regularly arched above, columellar slightly reflected above, receding at the base, much arched. Lat. maj. 16, min. 13, alt. 8 mill.

Vitrina Beckiana, *Pfr. in Proc. Zool. Soc.* 1848; *Mon. Helic.* ii. 499; *Icon.* t. 2. f. 37–39.

Vitrina peraffinis, *Beck in Sched.*

Hab. Philippines.

22. VITRINA POLITISSIMA.

Shell globose-depressed, rather solid, smooth, highly polished, diaphanous, horny, radiated more darkly; spire moderate, convex; suture impressed, submarginate; whorls four, slightly convex, rapidly increasing, the last rounded-depressed, wide at the base; aperture oblique, lunate, rounded, as high as wide; peristome simple, upper margin arched in front, columellar slightly arched. Lat. maj. 14, min. 11, alt. 7½ mill.

Vitrina politissima, *Beck, MSS.*

Pfr. in Proc. Zool. Soc. 1848; *Mon. Helic.* ii. 499. n. 21; *Icon.* t. 3. f. 12–14.

Hab. Zebu, Philippines.

23. Vitrina Leytensis.

Shell depressed, circuit oval, very thin, smooth, very bright, lutescent-pink; spire nearly level, scarcely elevated; suture lightly impressed; whorls three, rapidly increasing, the last nearly level above, more convex and rather wide at the base; aperture slightly oblique, rounded, lunar, wider than high; peristome very thin, upper margin scarcely arched, columellar slightly reflected above, forming an obtuse angle with the lower at the base. Lat. maj. 13, min. 10½, alt. 7 mill.

Vitrina Leytensis, *Beck*, *MSS.*
Pfr. in Proc. Zool. Soc. 1848; *Mon. Helic.* ii. 500. n. 22; *Icon.* t. 3. f. 15–17.

Hab. Philippines.

24. Vitrina margarita.

Shell depressed-globose, very thin, striatulate, bright, pellucid, pinky-hyaline; spire rather small, nearly level; suture linear; whorls three and a half, nearly level, rapidly increasing, the last large, inflated; aperture oblique, lunate-subcircular; peristome very thin, upper margin dilated in front, columellar lightly arched. Lat. maj. 14, min. 11, alt. 8 mill.

Vitrina margarita, *Beck*, *MSS.*
Pfr. in Proc. Zool. Soc. 1848; *Mon. Helic.* ii. 500; *Icon.* t. 2. f. 34–36.

Hab. Philippines.

25. Vitrina gutta.

Shell depressed-globose, very thin, quite smooth, bright, hyaline; spire very slightly elevated; suture linear, narrowly margined; whorls three and a half, nearly level, rapidly increasing, the last large, depressed-rounded, rather wider at the base; aperture slightly oblique, lunate-circular; peristome simple, regularly arched all round, columellar margin passing inwards, slightly reflected above. Lat. maj. 11, min. 8½, alt. 6 mill.

Vitrina gutta, *Pfr. in Proc. Zool. Soc.* 1848; *Mon. Helic.* ii. 500; *Icon.* t. 2. f. 25–27.

Hab. Luzon, Philippines.

26. Vitrina rufescens.

Shell depressed-globose, very thin, plicatulate, bright, pellucid, rufescent; spire shortly conoidal, rather obtuse; suture impressed; whorls nearly four, slightly convex, rapidly increasing, the last ventricose; aperture scarcely oblique, lunate-subcircular;

peristome thin, subinflected, margins remote, the upper regularly, the columellar slightly arched. Lat. maj. 13, min. 10, alt. 8 mill.

Vitrina rufescens, *Pfr. in Proc. Zool. Soc.* 1848; *Mon. Helic.* ii. 501; *Icon.* t. 6. f. 11–13.

Hab. Mindoro.

27. VITRINA SMARAGDULA.

Shell slightly depressed, thin, scarcely striatulate, dull, diaphanous, golden-green; spire rather small, nearly level; suture slightly impressed, very narrowly margined; whorls three and a half, nearly level, rapidly increasing, the last subplanulate on each side, wide at the base; aperture scarcely oblique, rounded-lunar, wider than high; peristome thin, subinflected, upper margin dilated in front, columellar scarcely receding, slightly arched. Lat. maj. 12, min. 9½, alt. 7 mill.

Vitrina smaragdulus, *Beck, MSS.*
Pfr. in Proc. Zool. Soc. 1848; *Mon. Helic.* ii. 501.

Hab. Negros, Philippines.

28. VITRINA CRENULARIS.

Shell depressed, very thin, glabrous, bright, pellucid, golden; spire plane; suture slightly impressed; whorls three and a half, nearly level, plicate-crenulated at the suture, rapidly increasing, the last depressed, wide at the base; aperture oblique, rounded-lunar, wider than high; peristome thin, slightly inflected, upper margin dilated in front, columellar slightly arched, basal rather straight. Lat. maj. 13, min. 10, alt. 7 mill.

Vitrina crenularis, *Beck, MSS.*
Pfr. in Proc. Zool. Soc. 1848; *Mon. Helic.* ii. 501; *Icon.* t. 3. f. 9–11.

Hab. Philippines.

29. VITRINA RESILIENS.

Shell depressed, very thin, very finely and closely plicatulate, bright, pellucid, greenish straw-coloured; spire nearly level; suture slightly impressed; whorls three and a half, nearly level, the last wide, depressed, almost entirely membranous at the base; aperture oblique, lunate-oval; peristome quite simple, columellar margin extending firmly, slightly arched. Lat. maj. 11, min. 8½, alt. 6½ mill.

Vitrina resiliens, *Beck, MSS.*
Pfr. in Proc. Zool. Soc. 1848; *Mon. Helic.* ii. 501.

Hab. Zebu, Philippines.

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